THE MEDIATING EFFECT OF STUDY SKILLS AND HABITS IN THE RELATIONSHIP BETWEEN DISRUPTIVE BEHAVIOR AND STUDENT ENGAGEMENT IN MATHEMATICS AMONG FIRST YEAR COLLEGE STUDENTS

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ABSTRACT

This study explores the mediating effect of study skills on the relationship between disruptive behavior and student engagement in secondary school students. Disruptive behavior, characterized by actions that hinder the learning environment, is known to detrimentally affect student engagement, which is crucial for academic achievement. The study is quantitative by nature and employed a correlational research design; data were collected from a sample size of 300 students using validated questionnaires measuring disruptive behavior, study skills, and student engagement. Results show that disruptive behavior garnered a very low descriptive equivalent, while student engagement and study skills garnered a high descriptive equivalent. Moreover, there was no significant relationship between disruptive behavior and student engagement. There also was no significant relationship between disruptive behavior and study skills. However, once study skills is considered as a mediating variable, there is a significant influence of disruptive behavior on student engagement.

KEYWORDS: Study Skills and Habits, Disruptive Behavior, Student engagement, Pedagogy

1. INTRODUCTION

In today's problem, it is critical to understand the significance of student engagement. According to Delfino (2019), up to 20% of pupils in any given year describe themselves as disengaged. Many students fall behind academically and do not catch up in later years. Students that are disengaged are more likely to drop out, accomplish the bare minimum, and are difficult to instruct. They are uninterested in class discussions, appear bored regularly, tune out, distract others, give up quickly on tasks, speak out of turn, arrive late to class, disrupt the class flow, and have poor attendance. Furthermore, research shows that in South Australia, 48 percent of kids are actively disengaged and unmotivated to earn high academic marks. They were not paying attention, not interested, and did not feel being cared for. According to some teachers, disengaged learners are hard to handle. (Jones, 2018)

The importance of knowing student engagement shows the wholeness of a certain student on how he/she collaborates, among others. It may be figured out through their behavior, emotion, and thinking when they got involve in some academic school activities. Studies showed that engaged students achieve high level of academic success, stay in school, and attend classes regularly (Ashkzari, Piryaei, & Kamelifar, 2018; Kahu & Nelson, 2020). Students' high engagement are the best sources of information. Researches exist to support schools and districts in measuring levels of student engagement in classrooms and school in general. It helps to assess student perceptions on the level of how invested and attentive they are in class and how interested they become in class's subject matter.

In Davao Region, disruptive behavior can be seen among students in all schools across the region and how it affects their engagement in the classroom. These disruptive behaviors can be best resolved with the use of different strategies employed by the teachers. In consonance to this, findings from different studies show that introducing suitable strategies in the classroom boosted student engagement, reduced disruptive behavior, and increased student response significantly (Ervin, Wilson, Maynard, & Bramblett, 2018). In fact, results show that every single student is observing to be less disruptive in the classroom when teachers incorporated various strategies into the lesson ultimately lead to higher levels of student engagement and lower levels of disruptive behavior in the classroom.

Various studies have been conducted about disruptive behavior, student engagement, and study skills and habits. However, some of these studies are bivariate. Moreover, there are scarcity of studies on the association between disruptive behavior and student engagement, especially in the Philippine educational context. With this, there is a sense of urgency and that the researcher is driven to conduct the study to find out the mediating role of study skills and habits on the relationship between disruptive behavior and student engagement. This study may impact the educational system especially in dealing with students' misbehavior. Furthermore, the findings of this study will serve as a basis in crafting school policy and regulations. This will provide salient insights on the part of administrations of educational institutions in planning and implementing programs and policies

This study explored whether a study skills and habits impacted the relationship between disruptive behavior and student engagement, particularly in mathematics. It investigated if this study skills and habits acted as a mediator between disruptive behavior and student engagement. Additionally, by understanding the connection between study skills and habits, disruptive behavior, and student engagement, this research addressed a need in the field and benefited organizations like the Department of Education, school administrators, teachers, students, and future researchers.

The study aimed to determine the mediating effect of study skills and habits on the relationship between disruptive behavior and student's engagement among first year college students in Panabo City, Davao del Norte. More specifically, it sought to realize the following objectives:

1. What is the level of disruptive behavior in terms of:
   a. distraction – transgression.
   b. schoolmates' aggression; and
   c. aggression to school authority.;
2. What is the level of student engagement in learning mathematics in terms of :
   a. cognitive;
   b. affective;
   c. behavioral; and
   d. personal agency
3. What is the level of study skills and habits among first year college students in terms of:
   a. Health habits
   b. Time management
   c. Attitude
   d. Concentration
   e. Academic stress
4. Is there a significant relationship between disruptive behavior and student engagement?
5. Is there a significant relationship between disruptive behavior and study skills and habits?
6. Is there a significant mediating effect of study skills and habits on the relationship between disruptive behavior and student engagement in mathematics?

2. RELATED LITERATURE

i. Disruptive Behavior. Disruptive behavior refers to tardiness, cutting of classes, disobedience of orders, unfinished homework, and other forms of dishonesty. As a result, some instructors try to avoid bringing such an unwanted conduct into their working environment in order to avoid disrupting the students' learning (Jati, Fauziati, & Wijayanto, 2019). Disruptive behavior reduces the likelihood of completing a high degree of education and obtaining academic success. This means that the student will receive a worse grade and will have less academic success in class (Khasinah & Elviana,2021).

Getting away from those destructive attitudes, peers and teachers can have broad knowledge in every essential subject to achieve success in the given school activities; realize competent learning methods; conduct themselves well; and be capable of socializing other people to their institution at the same time (Noeth-Abele,2020). Class troublemakers, cutting-classes, bickering, alcoholic drinkers, and becoming a team of a given gang organization are all examples of disruptive behavior. According to the study of Navarro-Paton, Mecias-Calvo, Eirin-Nemiña, and Arufe-Giraldez (2022), one-third of students were participating in this type of disrupting conduct as an influencing behavior that interlocks with their minds. In addition, they explained that this type of disrupting actions may include being fall asleep during class hour, tardiness, chatting and making phone calls, get into trouble by texting, fun of video playoffs or even in a simplest form of not doing right conduct that is intimidating.

Distracting attitudes throughout the entire class will result in a disappointing outcome when students talk during discussion hour and make occasional interruptions while the teacher works on the teachings. In the Webster dictionary, there will be three definitions: space out, shatter the order manner, and deviate from the conventional path. Moreover, distracting attitudes are a major component that can have an impact on a family's daily connection since they lead to disagreements, misunderstandings, and disobedience of each family member, especially when it comes to house regulations (Retuerto, De Lahidalga, & Lasurtegui, 2020).

a. **Student Engagement.** Student engagement is defined as a student's commitment to an organization and efforts to complete the assigned learning job in order to obtain a high degree of academic success. It suggests that the emphasis is on encouraging positive attitudes, accomplishments, and a sense of belonging among students in the institution to encourage them to stay longer (Abla & Fraumeni, 2019). An eager thinker, an engaged learner has a lively attitude on completing the assigned task and keeping the teammates motivated along the way.

In addition, Delfino (2019) asserted that engagement or belongingness has cognitive, affective, and behavioral dimensions, and it can refer to active, goal–oriented, flexible, helpful, constant, determined, and sensitively affirming interactions in an academic activity. They further explain that the fourth component relates to the students' active interest and self-reliance in the acquisition of knowledge and learning as they combine the three dimensions of cognitive, affective, and behavioral.

Moreover, Bond and Bedenlier (2019) states that student engagement refers to a student's level of attention, interest, curiosity, positive thinking, and eagerness when learning and being taught, as well as the level of motivation they have to learn and improve in their education. Most of the time, student engagement is based on the belief that learning develops when students are intrigued, interested, or motivated, and that learning tends to stall when students are bored, neutral, irritated, or disengaged.

Teachers frequently convey guideline objectives such as increased student involvement or progressed student engagement. Student engagement, as defined by Heilporn, Lakhal, and Belisle (2021), is a construct that encompasses both academic and non-academic aspects of the student experience, including active and collaborative learning, participation in challenging academic activities, formative communication with academic staff, involvement in enriching educational experiences, and a sense of legitimacy and support from university learning communities.

a. **Study Skills and Habits.** Study skills and habits, as defined by Jafari, Aghaei, and Khatony (2019), are practices that help us learn more efficiently. In their study, they found that study skills and habits improve the measure of test-taking skills and measure of test anxiety which contributed considerably to the prediction of grade point average in a study on test anxiety, study skills, and academic success. In addition, a study of Magulod (2019) on the relationship between learning styles, study skills and habits, and academic performance discovered that students' learning styles have a significant relationship on study skills and habits, and academic performance.

However, a study of Tus, Rayo, Lubo, & Cruz (2020) on learners' study habits and academic performance found that the students' study skills and habits are at a relatively average level. They recommend that in enhancing students' study skills and habits, relevant motivation, note-taking, reading ability, and health could be improved to hone their academic performance. On the other hand, a study of Jafari et al. (2019) on study skills and habits and academic performance found that study skills and habits were more similar than different when compared by examination performance. A majority of students used study aids as a memory aid or for review, but students who performed in the top third of the class were less likely to use them at all. Recently, a study of Hendrawaty et al., (2021) on the study skills and habits of undergraduate students during COVID-19 pandemic revealed that students' good study skills and habits have improved their academic performance despite of the onslaught of the pandemic. It is also shown in the same study that female students have better study skills and habits that male, since they were more competent in managing their study time and that female students were more active in participating in online learning than males.

3. METHOD

This study utilized a quantitative, non-experimental research design with the application of correlational technique to determine the significant mediating effect of study skills and habits on the relationship between disruptive behavior and student engagement. Quantitative design begins with a theory, form hypothesis base on the theory and then testing the theory (Creswell and Creswell, 2017). The data to be used will be gathered using survey questionnaires using an identified sample of respondents (Hua, 2015).

This study was non-experimental because the researcher did not control, manipulate, or alter the predictor variable or subjects, but instead, relies on interpretation, observation or interactions to come up with a conclusion (Creswell, 2021). Thus, this study did not involve treating or changing the data. Moreover, this study used correlational technique which was concerned with establishing relationships that exist among variables and describes them in relation to their direction, either positive or negative. The relationships of the mediating, independent and dependent variables of this study were checked and interpreted to determine emerging trends and patterns (Mackinnon, 2015).

The respondents of study were the 300 first year college students of a specific college in Panabo City. Raosoft sample size online calculator was used to determine the sample size of 300 from 1,350 population which consists of first year college students. The selection of the respondents was due to the fact that the researcher is a resident teacher of the target institution and that the knowledge to be generated from the research can be utilized in analysis of students' goals for reading and self-efficacy.

Specifically, only those who were in first year college students was considered. In case one or more students withdraw in the middle of the conduct of survey, getting an alternative of the same gender within the same institution shall be taken as replacement with voluntariness.

Stratified random sampling technique was used in choosing the respondents of the study since the population is too big to handle. The design is called stratified random sampling if the design within each stratum is simple random sampling (Koyuncu, and Kadilar,2009). The selection was based on the strata of the population which represented by its percentage size to achieve the substantial sample for data gathering. Moreover, proportional allocation is good to be used in considering a stratified random sampling technique.

4. RESULTS

In Table 1, the level of Disruptive Behavior has a weighted mean of 1.79 with standard deviation of 0.277 and a verbal interpretation of Very Low. The results show that distraction– transgression has the highest mean value of 2.05 which is described as Low. Meanwhile, the distraction– transgression is followed by schoolmate's aggression with a mean value of 1.92 and aggression to school authority with a mean value of 1.35, which are described as Low. This means that the level of disruptive behavior towards the students is never observed. It is a good indication that students really are very good based on their classroom experience that they are not distracted nor caused by distraction. They also have harmonious relationships with their classmates and have good communication with teachers.

Table 1. Level of Disruptive Behavior

Items	SD	Mean	D.E.
Distraction-transgression	0.571	2.05	Low
Schoolmate's Aggression	0.248	1.92	Low
Aggression to School Authorities	0.425	1.35	Low
Overall	**0.277**	**1.79**	**Very Low**

In Table 2, the level of student engagement has a weighted mean of 3.70 with standard deviation of 0.3530 and a verbal interpretation of High. The results show that behavioral has the highest mean value of 4.13 which is described as High followed by Affective which has the second highest mean value of 3.75 and cognitive has a mean value of 3.72 which are both described as High. Meanwhile, the lowest mean of all student engagement is in the personal agency with a mean value of 3.35. In appended Table 2.1, we can say that students are observed affectively, behaviorally and cognitively engaged and have a sense of belongingness and comfort as well as behave properly in all aspect of being a student. Moreover, students are moderately observed to have a personal relation in terms of expressing their selves and asking questions during the class discussion.

Table 2. Level of Student Engagements

Items	SD	Mean	D.E.
Cognitive	0.5804	3.72	High
Affective	0.6699	3.75	High
Behavioral	0.6421	4.13	High
Personal Agency	0.6132	3.35	Moderate
Overall	**0.3530**	**3.7168**	**High**

In Table 3, the weighted means of each criterion were computed, in which the level of study skills and habits has a weighted mean of 3.6232 with a standard deviation of .3212 and descriptive interpretation of High. The results revealed that study skills and habits are oftentimes manifested towards the students. Students are frequently review their notes as part of their study sessions, can skillfully connect ideas from one lecture to another and have a healthy lifestyle habit.

Table 3. Level of Study Skills and Habits

Items	SD	Mean	D.E.
Eating healthy food every 3-4 hours, while awake	0.848	3.45	High
Sleeping 7-8 hours on a regular schedule, at night	0.959	3.18	Moderate
Being physically active (exercise, sport, walking) for at least 5 hours/week	0.911	3.60	High
Have 30-60 minutes of unstructured downtime, daily.	0.787	3.22	Moderate
Find it easy to stick to a study schedule.	0.750	3.56	High
When I decide to study, I can start and keep going.	0.802	3.56	High
Spreading out my study time, to avoid cramming.	0.820	3.36	Moderate
Having enough time in my week to study.	0.869	3.09	Moderate
I spend more time on difficult courses.	0.728	3.35	Moderate

My online time is under control: it doesn't interfere with other things.	0.744	3.47	High
Being able to study subjects that I do not really like.	0.780	3.38	Moderate
I like learning, not just the thought of a good job.	0.629	3.92	High
Attending class.	0.531	4.58	Very High
Concentrating well when studying.	0.557	4.12	High
Listening attentively in class.	0.587	4.24	Very High
Focusing attention without too much effort	0.727	3.62	High
Listening 50 minutes, then take a 10-minute break	0.797	3.43	High
Being comfortable in large classes.			
Being confident delivering class presentations.	0.968	3.51	High
Being calm enough in an exam that I do my best.	0.849	3.51	High
Thinking to get passing grades.			
	0.833	3.95	High
	0.797	4.02	High
Overall	**0.321**	**3.62**	**High**

Table 4 shows the results of the test on the relationship between disruptive behavior and student engagement. Given that the computed p-value is higher than 0.05 level of significance wherein the p-value reflected is. 7383.This means that there is no significant relationship between disruptive behavior and student engagement. The results were contrary to other studies in the past. Studies conducted by Petursdottir and Ragnarsdottir, (2019) revealed that an increase in student engagement resulted to a decrease in disruptive behavior. Such results were also evident in the studies of Reyes et al. (2012).

Table 4. The relationship between disruptive behavior and student engagement.

Variable	R-Value	P-value	Decision on Ho
Disruptive Behavior	.0186	.7383	Accept
Student Engagement			
		Coefficient	.0237

Table 5 shows the results of the test on the relationship between study skills and habits and student engagement in mathematics. Given that the computed p-value is higher than 0.05 level of significance wherein the p-value reflected is. 2744.This means that there is no significant relationship between disruptive behavior and study skills. Such results were contradictory to studies conducted by Higgins et al., (2001) and Trisnawati et al., (2019). These studies found that disruptive behavior in the classroom negatively affects the study skills because it can affect the performance of students.

Table 5. The relationship between disruptive behavior and study skills

Variable	R-Value	P-value	Decision on Ho
Disruptive Behavior	.0609	.2744	Accept
Study skills			
		Coefficient	-.0706

Table 6 shows the results of the test of mediating effect of study skills and habits on the relationship of disruptive behavior and Student engagement. Given that the computed p-value is lesser than 0.05 level of significance wherein the p-value reflected is .0015. This means that there is a significant influence between disruptive behavior and study skills on student engagement. Looking into variables relationship with one another, it can be observed that disruptive behavior has no significant influence on student engagement because that computed p-value is higher than 0.05 (.5750). However, once study skills are considered there is a significant influence to student engagement because the computed p-value is lesser than 0.05 (0.003).

Table 6. The mediating effect of study skills and habits on the relationship of disruptive behavior and Student engagement

Variable	R-Value	P-value	Decision on Ho
Disruptive behavior			
Study skills		.5750	Accept
Student engagement		.0003	Reject
	.1996	.0015	Reject

5. RECOMMENDATIONS

Based on the results of the study, the following recommendations were made. The said recommendations were also generated towards addressing a beneficiary of the study.

Department of Education Officials. By understanding the mediating role of study skills and habit in the relationship between disruptive behavior and student's engagement, the Department of Education could make changes to improve students' disruptive behavior and engagement in mathematics. This will help the in the curriculum planning and to create a framework in improving teachers teaching strategies that can contribute to more engaging and meaningful activities for students, provide additional resources for teachers, and provide students with more support to help them succeed. Additionally, this study could provide insight into how to better equip teachers with the knowledge and skills necessary to support students in developing positive attitudes toward learning mathematics.

School Administrators. The findings of the study may help the school administrators in approving activities from the curriculum planners of the school on how to improve student's engagement in mathematics.

Students. This study offers us a greater comprehension of how disruptive behavior affects student engagement in mathematics and will help in formulating approaches to assist our students in accomplishing their goals in mathematics by fostering positive views for the subject and stimulating student involvement. This will make our students more interested to the lesson as the teacher will be able to plan activities to get their interest in the subject.

Future Researchers. Future researchers will have a solid educational foundation to build upon as they pursue research into the strategies that will address disruptive behavior to improve the student engagement in mathematics. The research can point to the significance of dealing misbehavior in learning, and how it can affect student engagement. It can also be used to create interventions on deal disruptive behavior to increase students' engagement in mathematics.

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