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An Investigation of the Relationship between Academic Buoyancy and Academic Performance among Senior High School Students: A Quantitative Research Approach

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ABSTRACT

Academic buoyancy is a student's ability to effectively deal with academic setbacks and challenges. This study aimed to determine whether academic buoyancy predicts academic performance among high school students. The objective of this study was to investigate the relationship between academic buoyancy and academic performance among high school students. Participants were 142 high school students who completed a questionnaire that included measures of academic buoyancy and grade point average (GPA). Data were analyzed using simple linear regression and frequency distribution. The results showed that academic buoyancy predicted academic performance among high school students. About 11.6% of the variation in academic performance was explained by academic buoyancy. The average GPA of the participants was 86.51, and the average academic buoyancy score was 4.69. The findings suggest that academic buoyancy is a valuable predictor of academic performance among high school students. Teachers and educators can use this knowledge to help students develop their academic buoyancy and improve their academic performance.

INTRODUCTION

Academic demands, parental and educator expectations, and disappointments are daily struggles that students must deal with. Prior to entering higher education under the previous Filipino educational system, students had to finish ten (10) years of primary and secondary school. However, the new K–12 Program adds two (2) years of comprehensive curriculum that students must finish. This would entail adding more steps to their roadmaps. Before they reach the finish line, they must complete further tasks, tests, requirements, and obstacles.

Students in senior high school must have a certain level of flexibility to adapt to these challenges and respond appropriately to the typical academic conflicts and difficulties they will encounter. Senior High academic life is unquestionably considered as being filled with frequent encounters with academic difficulty, adjusting to the faster pace of school-like workload, and dealing with a new environment. Unfortunately, not all students are able to overcome these academic obstacles. But what really matters is that despite all the pressure and mistakes, students still need to keep going and must learn flexibility to come back swiftly. Martin and Marsh (2006; 2008a; 2008b) propose a new construct to define a type of everyday resiliency, one they identify as academic buoyancy.

LITERATURE REVIEW

Academic Buoyancy

Martin (2002; 2012) notes that there is a dearth of research on students' responses to academic pressures and setbacks. A new avenue of research to investigate these significant student behaviors is suggested using the buoyancy construct. Generally speaking, buoyancy is the capacity of a person to successfully navigate the difficulties and obstacles that are part of daily life (Martin & Marsh, 2008a; 2008b). Academic buoyancy is the term used to describe it in the context of a learning environment (Martin & Marsh, 2008a).

Martin (2002) originally introduced the idea of academic buoyancy. It generally refers to a student's capacity to recover from setbacks, difficulties, and hurdles they confront in their regular academic lives. See it as the resiliency required by students to get through a standard school day. Contrary to the traditional notion of resilience, which primarily applies to students who face severe hardship, this concept is more general. Academic buoyancy is probably a state of resilience, but Martin and Marsh's (2008) research demonstrate that it is not the same as it.

Academic buoyancy is set within a positive psychology context, which fosters the development of positive qualities such as well-being, optimism, happiness, and determination. Positive psychologists believe that individuals can flourish and achieve psychological growth through interactions that provide opportunities to address aspects of their lives that are not yet adaptive (Frederickson, 2001; Martin & Marsh, 2008a).

According to the "broaden and build hypothesis" (Fredrickson, 2001; Fredrickson & Joiner, 2002; Martin & Marsh, 2008a), good feelings like joy, curiosity, happiness, pride, and love may expand people's fleeting thought-action repertoires and develop their enduring personal resources, which can include anything from physical and intellectual resources to social and psychological resources. Research by Fredrickson and Joiner (2002) shown that employing incremental procedures, pleasant emotions connected to expanded thinking may start

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upward spirals that lead students toward emotional well-being while boosting their toolkit of coping mechanisms for future encounters with adversity.These theoretical pillars and those supporting Martin and Marsh's buoyancy construct have similarities, according to their 2009 research. As a result, academic buoyancy may be seen through an even more comprehensive theoretical lens. It broadens the debate beyond just projecting student achievement to include the creation and implementation of interventions that will alter student behavior. It may be possible to manage academic failures more effectively by teaching students how to identify the maladaptive habits that get in the way of their achievement and how to use techniques to replace those maladaptive behaviors with more adaptive ones.

According to Martin and Marsh's research, students in senior high school and college can benefit from the academic buoyancy concept. Students can learn to improve their achievements every time they face scholastic problems by focusing on their strengths and adopting buoyant habits. The chance of perseverance and academic achievement can be raised consequently, which can lead to more positive, productive patterns of behavior for future situations.

In conclusion, academic buoyancy refers to a student's capacity to recover from the difficulties they face daily at school. It takes place in a positive psychology, which promotes the growth of positive traits like well-being, optimism, happiness, and tenacity. According to Martin and Marsh's study, academic buoyancy differs from the traditional resilience concept and applies to students of all academic levels. Students may manage academic failures more effectively and achieve higher academic results by learning about maladaptive habits and how to replace them with more adaptive ones.

Academic Buoyancy and Academic Achievements

In his 2009 article, Krathwol analyzes numerous research methodologies for the social sciences and education. Martin (2006) suggested and empirically assessed a multidimensional model of personal bests (PBs). Academic buoyancy is a term that Martin and Marsh (2008a) introduced to describe students' capacity to overcome obstacles and failures in the classroom (Schmitt *et al.* 2009) looked at the influence of demographic characteristics on admission choices and utilized cognitive and noncognitive indicators to predict college student success. Strickland (2015) looked at academic buoyancy as an explanatory factor for college students' success and retention.

The research articles on this list span a wide range of subjects in the social sciences and education, such as academic buoyancy, engagement, and predictive modeling. They make use of a range of research techniques, including empirical analysis, the construct validity approach, and developmental construct validity studies. Some of the papers—including Martin and Marsh's (2008a) and Strickland's (2012)—examine the connection between academic buoyancy and performance (2015). Academic buoyancy, which describes students' capacity for adjusting to obstacles and problems in the classroom, is a crucial concept because it may have an impact on how well teenagers handle pressure and challenges in the classroom and, ultimately, their performance in school. It's crucial to note that West *et al.* (1995) examined the issues and solutions related to employing structural equation modeling with non-normal variables, which is an important statistical technique used in social science research.

The academic buoyancy as an explanatory factor for college student success and retention is examined in Strickland's (2015) dissertation. Even after accounting for other academic and non-academic characteristics, he discovered that academic buoyancy is positively related with accomplishment and retention. Furthermore, academic buoyancy could have a big impact on student involvement and motivation, which are crucial indicators of academic success. Martin and Marsh (2008a) speculate that it may support students' involvement and perseverance in the face of academic challenges, while Strickland (2015) discovered a favorable relationship between it and academic self-efficacy. Overall, the research points to buoyancy as a useful concept for comprehending academic achievement, particularly in terms of predicting academic success and retention. This shows that initiatives to improve academic buoyancy among students may be helpful for raising their academic performance.

Overall, it underscores the need to study academic buoyancy as a predictor of academic performance in senior high school students. In addition to academic pressures, parental expectations, and frustrations, it is noted that students confront a variety of obstacles and demands in their academic careers. The new K-12 curriculum has increased the academic obligations placed on senior high school students, including the number of assignments, tests, deadlines, and other requirements.

This study makes the case that considering these difficulties, students need a certain kind of resilience that will allow them to respond effectively to academic pressures and difficulties. They must specifically cultivate academic buoyancy, which is the capacity to recover from common academic difficulties. The researchers propose that academic buoyancy is a key variable in determining how well senior high school students will perform academically. Altogether, it implies that academic buoyancy is a crucial concept that can aid seniors in high school in adjusting to the rigorous academic requirements of the new K-12 curriculum. Researchers can learn how students respond to academic obstacles and create useful techniques to promote their academic performance by studying academic buoyancy.

Consequently, the aim of this study is to investigate whether academic buoyancy predicts academic performance of chosen Senior high school students based on their grade - point average (GPA) in their first semester.

MATERIALS AND METHOD

A total of 143 senior high school students in grades

11 and 12 from chosen private and public schools in Carmona Cavite participated in the survey. There are 68 female respondents, 74 male respondents, and 1 respondent who did not state their gender. Using the random cluster selection method, the respondents were chosen. Being the first batches of the SHS program, they are introduced to a new environment with a great deal of effort and high expectations for complying with the requirements; consequently, this characteristic of the respondents fulfills the requirement of the study.

When the principals of the chosen schools in Carmona gave their consent, the researcher asked the instructors for assistance in disseminating survey questionnaires to the targeted students in each school. The questionnaire was only made available to students who volunteered to participate and signed the informed consent form. They received guarantees of their privacy and confidentiality before beginning the questionnaire. Also, they were made aware of their right to refuse to complete the questionnaire at any moment.

The Academic Buoyancy Scale was used to measure academic buoyancy (ABS; Martin & Marsh, 2008a, 2008b). Academic buoyancy (four elements, e.g., "I don't let study stress get on top of me") describes a student's capacity to handle pressure, adversity, and relatively minor setbacks in a day-to-day academic environment. The ratings ranged from 1 (for "Strongly Disagree") to 7 (for "Strongly Agree"). Previous studies have shown unidimensionality, invariance with respect to age, race, and gender, reliability, roughly normal distribution, and strong relationships with a variety of educational achievements (Martin, Colmar *et al.*, 2010; Martin & Marsh, 2008a, 2008b; Putwain *et al.*, 2012).

Internal consistency and test-retest reliability indicate that this scale is accurate (Time 1 Cronbach's =.80; Time 2 Cronbach's =.82; test-retest r=.67). Past studies utilizing this scale have demonstrated that it has a sound factor structure, is trustworthy and normally distributed, and strongly predicts a range of academic results for high school students (Martin & Marsh, 2006).

RESULTS AND DISCUSSION

Overall, the responses of students are valid and fit for the criteria of the target population. During the data screening, one participant did not indicate the gender so new category was created which is "not specified" for the participant who did not indicate their gender.

Table 1: Normality Distribution Test – Skewness and Kurtosis

	Skewness		**Kurtosis**	
	Statistics	**Std. Error**	**Statistics**	**Std. Error**
Gen Ave (Gpa)	.009	.403	.603	.403
Buoyancy	.370	.203	1.207	.403

The above table shows a not significantly different from that of the normal distribution. West et al. (1996) proposed a reference of substantial departure from normality as an absolute skew value > 2 and absolute kurtosis (proper) value > 7.

Table 2: Normal Distribution Test

	Kolmogorov-Smirnov		**Shapiro Wik**	
	Statistics	**Sig.**	**Statistics**	**Sig.**
Gen Ave (Gpa)	.059	.200	.985	.114
Buoyancy	.072	.064	.981	.040

Table 2 demonstrates that the null hypothesis must be accepted because the p-value for Gen. Ave. using Kolmogorov-Smirnov is more than 0.05 and Shapiro-Wik has a p-value of.114, both of which are consistent with the assumption that the data are normal. The same process was used to determine buoyancy when the p-values for Kolmogorov-Smirnov and Shapiro-Wik tests were both greater than 0.05 and, respectively,.064 and.040, respectively, assuming normality of the data.

Also, the participant's demographic information was presented using frequency distribution. The average GPA and academic buoyancy were presented using mean and standard deviation.

It is suitable to utilize basic linear regression in this study to determine whether academic buoyancy, which serves as the independent variable, predicts academic performance, which serves as the dependent variable.

Demographic Profile

As observe in Table 3, 51.7% of the participants were males and 47.6 % were females. The data shows 1

Table 3: Demographic Variables: Sex

Sex	**Frequency**	**Percent %**
Female	68	47.6
Male	74	51.7
Not Specified	1	.7
Total	**143**	**100**

participant who did not indicate their sex.

Table 4 indicates that 57 students attended public school and 84 students who participated attended private schools. The youngest and oldest participants in table 5 are, respectively, 15 and 19, respectively. Participants between the ages of 16 and 17 made up the largest group.

Table 6; below shows the average GPA of the participants is 86.51 with the spread of 4.467. On the other hand, Academic Buoyancy's average scale is 4.69 with a dispersion of .958.

The presented descriptive statistics show that the academic buoyancy scale average for the study's participants is 4.69, with a standard deviation of 0.96. Thus, it can be inferred that the study's participants had a moderate to high level of academic buoyancy.

The ability of academic buoyancy to predict academic performance was examined using a linear regression analysis. According to the significant regression equation

Table 4: Demographic Variables: School Type

School type	Frequency	Percent %
Private	84	60.1
Public	57	39.9
Total	**143**	**100.0**

Table 5: Demographic Variables: Age

Age	Frequency	Percent %
15	1	.7
16	45	31.5
17	54	37.8
18	33	23.1
19	10	7.0
Total	**143**	**100**

Table 6: Descriptive Statistics

Descriptive Statistics			
	Mean	**Std Deviation**	**N**
Gen Ave/ Gpa	86.515	4.46792	143
Academic Buoyancy	4.6986	.95898	143

Table 7: Prediction of Academic Performance based on Academic Buoyancy

Variable	P	T	B	Sig	F	R2	R
Constant			79.070				
Academic Buoyancy	.000	4.295	1.585	.000	18.443	.116	.340[a]

(F (1, 141) = 18.443, p.000), the results demonstrated that academic buoyancy predicts academic performance.

Also, the coefficient of determination (R2) was found to be.116, indicating that academic buoyancy can account for about 11.6% of the variation in academic performance. This suggests that other factors account for the remaining 88.4% of the difference in academic achievement.

The data also demonstrates a strong correlation between academic buoyancy and performance. With a constant term of 79.070, a student's expected GPA rose by 1.585 for every change in academic buoyancy.

According to the analysis, academic buoyancy, or a student's capacity for overcoming obstacles, can be used to predict academic performance. Academic buoyancy does not, however, fully account for all the variables influencing academic performance.Using data on gender, school type, and age, the study examined the association between academic buoyancy and academic achievement among 143 children. Following a normality check of the data, a new category was made for the one participant who did not specify their gender. Based on the findings that the data had a normal distribution, basic linear regression was utilized to ascertain the association between academic buoyancy and academic performance. The mean and standard deviation were used to depict the average GPA and academic buoyancy. According to the findings, academic buoyancy predicts academic performance to some extent, but it does not consider all the factors that affect academic success. The study sheds light on the significance of academic buoyancy in academic performance. This backs up research projects started by Martin and Marsh that emphasize the value of academic buoyancy as a separate concept from resilience. A connection between academic success and motivation was established by Schmitt, Keeney, Oswald, Pleskac, Billington, Sinha, and Zorzie (2009) and Martin (2002).

Martin did, however, draw attention to a vacuum in the literature where the importance of student reaction in academic contexts is not adequately addressed, which could represent a wasted chance to raise student accomplishment. Students require everyday resilience, often referred to as buoyancy, to handle obstacles in the classroom and continue moving forward. This information can assist in the creation of efficient interventions that enhance academic performance (Clark, 2005; Martin, 2002). The notion that buoyancy is a unique construct that may evaluate students' motivation and involvement in academic contexts is being supported by an increasing body of research. Academic settings are recognized to be hard, and a growing body of research supports the idea that buoyancy is a distinct construct that can measure student motivation and engagement in academic settings (Martin & Marsh, 2006, 2008a, 2008b, 2009; Martin *et al*., 2010).

Further studies, including one conducted by Strickland (2010), have strengthened the findings of previous research on buoyancy as a predictor of academic achievement in higher education settings.

The K to 12 Senior High Program in the Philippine setting is a unique and a new experience to the students where academic challenges and obstacles can lead to a decreasing academic performance or worst drop out. The experience of students may be similar; perhaps, the challenges may appear to be common to all students. But the way that students respond to the same situation can be quite different.

The Senior High Program is considered a new ground in the Philippine educational setting and students in this level expected to encounter routine academic challenges known to result in setbacks for some students. From the higher demands for independent work to the increased level of academic rigor, students will experience routinely new forms of daily pressures that might make or break them. In this study, shows how academic buoyancy could be a crucial factor to a student's success.

CONCLUSION AND RECOMMENDATION

This study sought to determine the relationship between senior high students' academic performance and academic buoyancy. This study brought to light the significance of academic buoyancy in terms of students' academic achievement. Teachers and academics who are interested in improving students' performance would benefit from learning more about how students react to normal academic difficulties and setbacks. In accordance with the findings of this study, buoyancy is a reliable indicator of first-semester GPA.

This study suggests employing a larger, more varied sample to provide more conclusive results that may be applied to a wider range of situations. It would also be beneficial to incorporate additional factors like socioeconomic position, race/ethnicity, and parental participation that may have an impact on academic success. Furthermore, employing more sophisticated statistical techniques, such as structural equation modeling, may aid in improving understanding of the underlying processes via which academic buoyancy affects academic performance.

Furthermore, it also wants to suggest more research into the connection between academic buoyancy and school type, namely public vs. private schools. The conclusion that students from public and private schools have distinct academic buoyancy led to the establishment of another assumption. In connection with this, earlier studies shown that there are differences between the academic buoyancy of male and female, which may also be studied in a Philippine setting.

The study's overall findings emphasize the significance of academic buoyancy for academic success, particularly in the context of the K–12 Senior High Program in the Philippines. It implies that academic buoyancy-related interventions could be a useful strategy for raising academic performance and reducing dropout rates. Nonetheless, more investigation is required to completely comprehend how academic buoyancy contributes to academic performance and to create efficient solutions.

Finally, the results of this research offer fresh viewpoints to consider when formulating plans for aspects of students' lives that might be impeding desired accomplishment levels. Academic buoyancy can play a significant role in helping 21st-century students perform better in an extremely demanding and difficult educational environment. Additionally, boosting student achievement is a crucial component in enhancing institutional identity.

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