TIME MANAGEMENT, NOTE-TAKING SKILLS, AND TEST-TAKING STRATEGIES: ITS EFFECT ON STUDENTS' ACADEMIC PERFORMANCE

Amparo V. Dinagsao
University of Science and Technology of Southern Philippines, Lapasan Highway, Cagayan de Oro City, Philippines
amparo.dinagsao@ustp.edu.ph

ABSTRACT— *The study investigates the effects of time management, note-taking skills, and test-taking strategies on students' academic performance. It uses the descriptive survey design with 2,178 respondents who consent to participate in the study. Findings revealed that the respondents' time management, note-taking, and test-taking strategies are of high level. However, regression analysis results showed that only the variable on test-taking has a significant effect on the students' academic performance. The recommendation includes that the institution formulates intervention programs and services to assist students whose skills and strategies are low to the very low. Several studies have also shown that these are valuable skills for students in other factors of their academic life. Future research may also seek to identify or develop more specific measures of academic performances and look into the differences of the students' academic performance when grouped according to the level of time management, note-taking skill, and test-taking strategies.*

Keywords: Study Skills, Time Management Skill, Note-Taking Skill, Test-Taking Strategies, Effect on Academic Performance, Regression Analysis of Study Skills, Regression Analysis on Academic Performance,

1. INTRODUCTION

Understanding the factors that influence the students' academic performance would greatly help institutions craft programs to help students achieve high academic ratings and succeed beyond university life. Several research studies have focused on academic-related skills. However, other non-academic-related such as time management may also be investigated, including the test-taking approach [1]. In addition, some lecturers have always assumed note-taking skills in college that students must have developed before entering university. Looking into the effect of this on students' academic performance will help convince concerned offices to include teaching and prompting students to understand the purpose and usefulness of note-taking skills for learning content [2].

The researcher investigated the variables' time management, note-taking skills, and test-taking strategies on students' academic performance in this paper. Specifically, it sought to answer the questions on:

1. What is the profile of the respondents in terms of their demographics and their level of academic performance?
2. What is the level of the respondents' study skills in terms of time management skills, note-taking skills, and test-taking skills?
3. Do the respondents' study skills have a significant effect on their academic performance?

This study considers the null hypothesis that the independent variables such as time management skills, note-taking skills, and test-taking skills have no significant effect on the students' academic performance.

The overall performance in each semester characterized by the academic performance in this study culminates in a Grade Point Average (GPA) score. This GPA score considers students' performance in their courses, i.e., innovative tasks, term examinations, assignments, problem sets, and long or short quizzes. The method of computing the GPA is below:

good measure of a students' academic performance. Current GPA = [Summation of (Course grade* Course Credit)] / [Summation of Gradable Credits]

GPA scores are between 0 (minimum) and 1.00 (maximum) and imply that the lower the score, the better the students had performed academically. Therefore, the GPA will be a

2. REVIEW OF RELATED LITERATURE

Results from a study showed that the constructs on procrastination, prioritization, and planning, were found to have strong indices of students' academic performance [3]. This result was similar to a 2003 study that established a moderate to strong negative correlation between academic procrastination and academic performance [4]. The GPA also noticeably increased by 0.025 points per additional study hour per week. [5, 6]

With the shift to flexible learning, some studies showed that students decided not to take notes in online courses and have been lax in their note-taking behavior. However, students may not always make the best decisions about how and when to take notes [7].

A study on the quality of in-class notes was the only significant predictor of academic performance compared to other note-taking behaviors [8]. Note-taking techniques enabled more profound and more integrated knowledge management [9].

Other studies showed that the test-taking strategies positively correlated with GPA [10]. Unfortunately, the university currently does not have a training program in test-taking skills. Though several studies investigated the effectiveness of such programs, the results of this study will consider the researchers' recommendations as coming up with training programs having longer than five weeks also produce significantly on the average achievement gains [11].

RESEARCH DESIGN AND METHODOLOGY

The descriptive survey design was appropriate to identify the respondents' academic performance factors. The college freshmen and the grade 11 senior high school students responded to a survey questionnaire the week before their first day of class in the university. The Office of Student Affairs, of which the researcher was a former director, facilitated data gathering during the "week of welcome" event. The first part of the instrument informed the students that the university will use their responses to design the different programs that may suit their needs and research purposes. Of the 3 369 students, 2,178 (64.6%) gave their consent to participate in the survey. In addition, these students permitted the researcher access to their grade point average at the end of the semester.

3. RESULTS AND DISCUSSION

This part presents the findings according to the study's research questions. Descriptive and inferential statistics, specifically the mean, frequency, standard deviation, and regression analysis, were used to analyze the data gathered through the aid of statistical software. The demographic profile of the respondents is in Table 1. Of the 2,178 students who participated in this study, the majority were females. Eight out of every 10 students are beneficiaries of the government's Pantawid Pamilyang Pilipino Program or 4Ps. The study setting is a state university where the government subsidizes the tuition fee and enrolment. Therefore, it is not surprising that the institution is the students' choice from low socioeconomic status. In addition, the Pantawid Pamilya is a program of the Philippine national government that invests in the education of poor households. These results implied that 4Ps beneficiaries completed their basic education and proceeded to get higher education. The program's target by 2030 is to reduce poverty [12].

Table 1 Distribution of Respondents According to their Characteristics

Characteristics	Frequency (*n = 2,178*)	Percentage (%)
Gender		
Male	991	45.5
Female	1174	53.9
LGBTQ+	13	0.06
Prefer not to say	0	0.0
Beneficiary of Pantawid Pamilyang Pilipino Program (4Ps)		
Yes	1846	84.8
No	332	15.2
College		
College of Engineering and Architecture	1016	46.6
College of Science and Technology Education	275	12.6
College of Information, Technology and Computing	385	17.6
College of Technology	134	6.1
College of Science and Mathematics	174	7.9
Senior High School	194	8.9

The same table shows that most of the respondents are from the College of Engineering and Architecture. This college also houses five academic programs, including civil engineering, architecture, electronics engineering, electrical and geodetic engineering.

Table 1.1 exhibits the level of the respondents' academic performance. The grade point average of the student's first semester in university life is the academic performance of this study. In the table, the majority of the respondents performed above average. The high GPA may result since the admissions office's rejection rate for first-year and grade eleven students is higher than 60%, implying that enrolled students have higher entrance exams than their cohorts. The result is similar to the findings of Obumneke-Okeke in 2017 on the determinant factors affecting academic performance, and investigation revealed a significant relationship between the university entrance exam and their academic performance [13].

Table 1.1 Level of the Respondents' Academic Performance (*n= 2178*)

Numerical Grades	Qualitative Description (QD)*	f	%
1.00 – 1.24	Excellent	0	0.0
1.25 – 1.50	Very Good	44	2.0
1.51 – 2.00	Above Average	1158	53.2
2.01 – 2.50	Average	874	40.1
2.51 – 3.00	Passing	81	3.7
3.01 – 5.00	Failed	21	1.0
	Overall Mean	**2.02**	
	Standard Deviation (SD)	**0.39**	
	QD	**Average**	

**based on the USTP Student Handbook 2021*

The respondents' level of study skills in terms of time management is in Table 2.1. The students expressed that they have a high level of this skill as they come to class on time, devote sufficient study time to each of their courses schedules definite times, and outline specific goals for their study time. The results are similar to the study at Pamukkale University, where time management skills and attitudes were at a moderate level [14].

Table 2.1 Respondents' Level of Study Skills in terms of Time Management (*n= 2178*)

Range	Qualitative Description (QD)	f	%
3.26 – 4.00	Very High	457	21.0
2.51 – 3.25	High	1101	50.6
1.76 – 2.50	Low	584	26.8
1.00 – 1.75	Very Low	36	1.7
	Overall Mean	**2.87**	
	Standard Deviation (SD)	**0.52**	
	QD	**High**	

	indicators	$\bar{x}$	SD	QD
1	*comes on time during classes and other meetings.*	3.18	0.70	High
2	*devotes sufficient study time to each of my subjects.*	3.08	0.72	High
3	*schedules definite times and outline specific goals for my study time.*	2.99	0.77	High
4	*prepares a "to do" list daily.*	2.59	0.92	High
5	*avoids activities which tend to interfere with my planned schedule.*	2.72	0.77	High
6	*uses prime time when I am most alert for study.*	2.86	0,74	High
7	*makes daily activity and study schedules especially at the beginning of the class*	2.79	0.79	High
8	*begins major requirements or tasks well in advance.*	2.78	0.75	High

Table 2.2 shows that 6 of every ten students have high to very high note-taking skills. The majority of the respondents revealed that marking or underlining parts are essential when reading. They also think about how the notes will be used later and organize their notes in some meaningful manner, to name a few.

Table 2.2 Respondents' Level of Study Skills in terms of Note-taking Skill (*n= 2178*)

Range	Qualitative Description (QD)	f	%
3.26 – 4.00	Very High	442	20.3
2.51 – 3.25	High	996	45.7
1.76 – 2.50	Low	654	30.0
1.00 – 1.75	Very Low	86	3.9
	Overall Mean	**2.80**	
	Standard Deviation (SD)	**0.57**	
	QD	**High**	

	indicators	$\bar{x}$	SD	QD
1	*thinks about how the notes will be used later*	3.11	0.79	High
2	*understands the lecture (recorded or live) and classroom discussion while taking notes*	2.70	0.73	High
3	*organizes notes in some meaningful manner (such as outline format)*	2.84	0.85	High
4	*reviews and edits notes systematically*	2.73	0.82	High
5	*takes note on supplementary reading materials*	2.81	0.76	High
6	*have a system for marking textbooks*	2.37	0.89	High
7	*marks or underlines parts considered important when reading*	3.26	0.84	High
8	*writes notes in the book reading*	2.60	0.89	High

Table 2.3 illustrates the respondents' study skills in terms of test-taking strategies. Results show that, on average, the respondents have a high level of this skill as they follow directions carefully when taking an exam. They also understand the exam questions before answering and

determining what the exam will cover and how their instructor assesses the exam.

Table 2.3 Respondents' Level of Study Skills in terms of Test Taking Strategies (*n= 2178*)

Range	Qualitative Description (QD)	f	%
3.26 – 4.00	Very High	558	25.6
2.51 – 3.25	High	1222	56.1
1.76 – 2.50	Low	392	18.0
1.00 – 1.75	Very Low	6	0.3
	Overall Mean	**2.99**	
	Standard Deviation (SD)	**0.68**	
	QD	**High**	

	Indicators	$\bar{x}$	SD	QD
1	*tries to find out what the exam will cover and how the exam is to be graded*	3.18	0.78	High
2	*feels confident and prepared for the exam*	2.60	0.75	High
3	*tries to imagine possible test questions during the preparation for an exam*	3.05	0.81	High
4	*takes time to understand the exam questions before starting to answer*	3.43	0.66	High
5	*follows directions carefully when taking an exam*	3.59	0.58	High
6	*usually gets a good night's rest prior to a scheduled exam*	2.58	0.79	High
7	*calmly able to recall what have been known during an exam*	2.73	0.64	High
8	*understands the structure of different types of tests, and am able to prepare for each type*	2.81	0.68	High

The researcher wanted to determine whether the study skills significantly impacted the respondents' academic performance, specifically time management, note-taking, and test-taking. For a more valid inference from the regression analysis for this problem, the researcher checked the residuals of the regression whether it followed a normal distribution. In addition, the multicollinearity assumption was examined by computing the correlation coefficients and checking the variance inflation factor (VIF) values. The correlation coefficients were less than .80, and the VIF values were below 5.00. These results established that no violation of the multicollinearity assumption in this paper.

The result of the regression analysis is in Table 3, showing an F-value of 4.772 and the model's probability value lesser than the set alpha of .05. The same table showed that the predictor values of time management and note-taking skills

Table 3 Regression Analysis of the Time Management, Note-taking skills and Test-Taking Strategies on Academic Performance

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.835	.059		31.224	.000
Time Management Skill	-.002	.023	-.003	-.104	.917
Note-Taking Skill	-.025	.021	-.035	-1.163	.245
Test-Taking Strategies	.085	.025	.099	3.463	.001

R-squared = .007
F-value = 4.772
p-value = .003 (highly significant)
alpha = .05

are greater than the common alpha level of .05, which indicates that these are not statistically significant. Since the p-value of the predictor variable test-taking skills is at .001, which is less than the set alpha, this implies that this variable significantly impacts the students' academic performance. The coefficient .085 gives the size of the impact or effect the test-taking skill had on academic performance. The results show that when the test-taking score goes up by one unit, the academic performance is predicted to go up by .085 taking note-taking and time management skills constant. The amount of time spent studying had no direct influence on academic performance [15]. The findings are contrary to the correlation results in another study with engineering students, where the time management behaviors had the most significant positive correlation with Semester GPA. However, the survey by Sweetnam investigated the relationship between teaching test-taking strategies and improving test scores showed a substantial gain in students' scores. Though this study did not consider GPA, it is worth noting since they used the end of the year's score [16].

4. CONCLUSIONS AND RECOMMENDATIONS

The present study could not support time management and note-taking skills as direct predictors of academic performance; the institution should formulate intervention programs and services targeted at assisting students whose skills and strategies are at a level of low to very low. Several studies have also shown that these are valuable skills for students in other factors of their academic life. Assessing pre-and post-intervention levels of these skills and strategies may enrich assessments of program effectiveness.

Future research may also seek to identify or develop more specific measures of academic performances and look into the differences of the students' academic performance when grouped according to the level of time management, note-taking skill, and test-taking strategies.

5. REFERENCES

[1] Bubic, A. (2020). The Relevance of Learning Approaches and Temporal Perspective for Test-Taking. *Center for Educational Policy Studies Journal*, *10*(4), 221-242.

[2] Robin, A., Foxx, R. M., Martello, J., & Archable, C. (1977). Teaching note-taking skills to underachieving college students. *The Journal of Educational Research*, *71*(2), 81-85.

[3] Adebayo, F. A. (2015). Time management and students' academic performance in higher institutions, Nigeria a case study of Ekiti state. *International Research in Education*, *3*(2), 1-12.

[4] Van Eerde, W., & Venus, M. (2018). A daily diary study on sleep quality and procrastination at work: The moderating role of trait self-control. *Frontiers in psychology*, *9*, 2029.

[5] Gortner Lahmers, A., & Zulauf, C. R. (2000). Factors associated with academic time use and academic performance of college students: A recursive approach. *Journal of College Student Development*.

[6] Britton, B. K., & Tesser, A. (1991). Effects of time-management practices on college grades. *Journal of educational psychology*, *83*(3), 405.

[7] Morehead, K., Dunlosky, J., Rawson, K. A., Blasiman, R., & Hollis, R. B. (2019). Note-taking habits of 21st-century college students: implications for student learning, memory, and achievement. *Memory*, *27*(6), 807-819.

[8] Chen, P. H. (2013). The effects of college students' in-class and after-class lecture note-taking on academic performance. *The Asia-Pacific Education Researcher*, *22*(2), 173-180.

[9] Makany, T., Kemp, J., & Dror, I. E. (2009). Optimizing the use of note-taking as an external cognitive aid for increasing learning. *British Journal of Educational Technology*, *40*(4), 619-635.

[10] Md Rahim, N., & Meon, H. (2013, April). Relationships between study skills and academic performance. In *AIP Conference Proceedings* (Vol. 1522, No. 1, pp. 1176-1178). American Institute of Physics.

[11] Samson, G. E. (1985). Effects of training in test-taking skills on achievement test performance: A

quantitative synthesis. *The Journal of Educational Research*, *78*(5), 261-266.

[12] Pantawid Pamilyang Pilipino Program (4Ps) - SDGs – Philippines (neda.gov.ph)

[13] Obumneke-Okeke, B. C. N., Bosah, I. P., & Mabel, I. (2019). Impact of national home school feeding program on enrolment and academic performance of primary school pupils. *Journal of Emerging Trends in Educational Research and Policy Studies*, *10*(3), 152-158.

[14] Tanrıögen, A., & Iscan, S. (2009). Time Management Skills of Pamukkale University Students and their Effects on Academic Achievement. *Eurasian Journal of Educational Research (EJER)*, (35).

[15] Adams, R. V., & Blair, E. (2019). Impact of time management behaviors on undergraduate engineering students' performance. *SAGE Open*, *9*(1), 2158244018824506.

[16] Sweetnam, K. R. (2003). Test-taking strategies and student achievement. Retrieved from http://www.cloquet.k12.mn.us/chu/ class/fourth/ks/stratigies.htm