

Study habits and academic performance in university entrants in Peru

Teofilo Salas-Achircana, Universidad Nacional de San Agustín de Arequipa, Peru

Ronald Leonidas Mamani-Gallegos, Universidad Nacional de San Agustín de Arequipa, Peru

Jose Calizaya-Lopez, Universidad Nacional de San Agustín de Arequipa, Peru

Abstract: Students acquire Study habits by assuming a positive or negative behavior determined by regular practice, significantly influencing their academic performance. This study investigated the relationship between study habits and academic performance among first-year university students in Peru, considering the influence of socio-academic background. This correlational study employed a quantitative, cross-sectional design. A purposive sample of 600 first-year students from three academic programs at a public university in Peru participated. A statistically significant correlation of medium level ($r= 0.417^{**}$, $p=0.000$) was found, indicating a direct relationship at 99% confidence between the study variables. In addition, a positive (+) trend was observed in study habits and an intermediate level in academic performance. It is concluded that a higher development of study habits leads to higher academic performance and that female students obtain better scores in both study habits and academic performance than male students.

Keywords: Study Habits, Study Strategies, Academic Performance, Entering Students, Higher Education.

Introduction

The educational management implemented by successive governments in Peru has harmed the formation of students in primary education, resulting in a low academic level in most students who go from high school to university. This result is the consequence of several factors. Among them are the insufficient investment in the sector, the bad educational practices implemented, the neglect by the rulers of teachers' demands, the demotivation of the teachers' guild in the face of government inaction, inadequate curricula, and, finally, the lack of commitment from the part of the teachers' guild. These factors were further aggravated during the virtual classes conducted amid the 2019 pandemic. (Gallegos et al., 2021).

Through regular practice, students develop positive or negative study habits. These habits, measured by assessments, can significantly influence a student's cognitive structure and ultimately impact their academic performance (high, moderate, or low) (Botina Moreano, 2021).

Regarding the dimensions of the study habits variable, each component developed by the student is specified. The study strategies dimension refers to the student's methods, techniques, or study approaches, including time management and having a study plan. The homework completion dimension outlines the organization and time required for academic activities, prioritizing form and content. The exam preparation dimension involves a review process to achieve the learning objective reflected, estimating the necessary time for

assessment. Moving beyond traditional study methods, this research identifies the way listening to the class, which is the meditative action that enhances intellectual growth, as a crucial dimension. This is not simply paying attention but a focused and engaged approach that fosters intellectual growth. Finally, the study support dimension highlights voluntary actions that students take to improve concentration and understanding (Najarro, 2020).

In this sense, Effective study habits are more than just behaviors; they're the tools students use to unlock efficient learning (Ruiz-Segarra, 2020). These habits empower students to learn more material in less time and minimize repetitive review cycles. To cultivate strong study habits, Salamea-Nieto & Cedillo-Chalaco (2021) emphasize key elements: planning, a dedicated study space, effective reading strategies, and time management mastery. These compendiums of good study habits are the building blocks for academic success. Therefore, academic performance is the academic rating achieved by the student according to the components that integrate the learning process (Arroyo-Ramírez et al., 2021). Also, the importance of the performance variable in the educational field has been of interest to the scientific community, identifying causes that can be attributable to teachers and students. Motivational factors, intellectual capacity, cognitive processes, study habits, academic stress, and the pedagogical capacity of the teacher are the main elements that influence the student's performance level (Martínez et al., 2020; Calizaya et al., 2022). In addition to this, the appropriate educational environment, university management, and the relationships established with peers are favorable for achieving proper performance; otherwise, this may result in suspension or academic dropout (Chambi-Choque et al., 2020; Bedregal-Alpaca et al., 2020).

From the review of previous studies, scientific evidence at the international level was found among the study variables. However, in the Peruvian context, there is still a need to fill the theoretical gap, with some studies of university students serving as references for the present research topic. Najarro (2020) found a low-level positive relationship between study habits and academic performance in second-year medical students. Similarly, Soto and Rocha (2020) discovered a low-level positive relationship between the study variables in nursing students. Additionally, Orna and Carlos (2022) found a low-level positive relationship between study habits and academic performance in university students of a second language. However, La Serna-Solari et al. (2023) demonstrated the absence of a relationship between study habits and academic performance in Peruvian university students, contradicting the findings of the previously mentioned authors. Therefore, it is necessary to continue with studies related to our topic to provide valid and scientific knowledge to fill the theoretical gap and clarify the contradiction.

Furthermore, the research results serve as a basis for improving and implementing programs to strengthen study habits, tutoring, and academic reinforcement. With this, it is intended that both teachers and professionals dedicated to student welfare implement new strategies to improve the performance of the student community.

Therefore, the general objective was to relate study habits and academic performance in university entrants according to the socio-academic variables of students in Peru.

Methodology

A non-experimental cross-sectional, ex post facto, correlational-quantitative design was used, and the information was collected from October to December 2023.

Participants

Six hundred (600) students from three social science programs at a public university participated in the study. They were intentionally selected through quotas (two hundred (200) students per program: Program 1, Program 2, and Program 3), encompassing both male and female first-year students enrolled regularly in the academic year twenty twenty-three, aged between sixteen and nineteen years old.

Instrument

The CASM-85 study habits inventory (Vicuña, 2014) was utilized. The scale comprises 53 items distributed across five dimensions: 1) study strategies, 2) homework completion, 3) exam preparation, 4) way listening to the class, and 5) study support. The items feature a dichotomous response (always=1 and never=0), determining positive and negative habits. A higher score indicates better study habits. The inventory can be applied individually or collectively, targeting students in their early university years. Evaluation categories range from very positive to very negative. The instrument validity was established for the Peruvian context (Rebaza, 2016) through construct validity via item-test analysis, confirming the model with the maximum likelihood method (confirmatory factor analysis). Reliability was assessed using the Kr-20 test, yielding values of 0.89, indicating high reliability. Additionally, socio-academic variables such as age and study program were incorporated into the inventory for comparative purposes.

For the academic performance variable, the inventory included a self-evaluation question based on the student's perception, aligned with the Peruvian grading system. The following ranges were used: averages below 10 indicated low performance, 11 to 15 indicated average performance, and 16 to 20 indicated high performance.

The reliability of the data for the local sample was also evaluated using the Kr-20 test (for dichotomous questions, which only present two possible options). The results were similar to those of the Peruvian validation study, with a value of 0.88, demonstrating high instrument reliability (Toro et al., 2022).

Procedure

The administration of the instrument began with obtaining prior authorization from the academic director. Subsequently, coordination was established with instructors of general studies courses to arrange suitable application times. Students were briefed on the research objectives, inventory instructions, and data protection measures to ensure their informed consent and participation. Ultimately, all participants provided their consent and received the instrument, resulting in unanimous approval.

Ethical Considerations

The study is based on ethical considerations related to human health research and the guidelines established by the Ministry of Health of Peru by Ministerial Resolution 233-2020-MINSA to promote research in human health in the country using international ethical standards.

Data Analysis

A statistical analysis was carried out utilizing the JASP program version 0.13.1.0. Data were formatted into a .xlsx (Excel) file.

The following steps were followed for statistical analysis: for comparing two independent samples, the Mann-Whitney U test was used with effect size (ES) calculated using biserial correlation (r_{bis}), with interpretive norms of no effect ($r_{bis} \leq 0.0$), small ($r_{bis} \geq 0.10$), medium ($r_{bis} \geq 0.30$), and large ($r_{bis} \geq 0.50$). Comparison of k-independent samples was performed using the Kruskal-Wallis H test and Post Hoc tests, with effect size calculated using epsilon squared (ϵ^2) (Domínguez-Lara, 2018), with interpretive norms of small for $\epsilon^2 \geq 0.01$, medium for $\epsilon^2 \geq 0.06$, and large for $\epsilon^2 \geq 0.14$ (Cohen, 1992). Spearman's Rho test was used to determine the correlation between variables.

Result

A Shapiro-Wilk test is used to evaluate the distribution, skewness, kurtosis, and normality of the data. The test reveals non-normally distributed data with significance values below 0.05. Furthermore, tests for homogeneity of variance were executed, prompting the adoption of non-parametric tests. Descriptive and comparative analyses of study habits and academic performance were performed, considering factors such as age, gender, and study area.

A statistical descriptive analysis of the socio-academic variables was conducted. The students' ages ranged from 16 to 19 years, with an average age of 17.86. Concerning gender, 62% were female, and 38% were male. Regarding the study program, an equal distribution of 33.33% was observed across the three selected programs.

Table 1. Categorization of students' study habits.

Categories	Study Habits	I	II	III	IV	V
Very positive	7%	3%	7%	4%	6%	6%
Positive	10%	7%	11%	9%	9%	10%
Trend +	54%	65%	52%	58%	55%	53%
Trend -	19%	20%	18%	19%	19%	20%
Negative	8%	4%	10%	8%	8%	9%
Very negative	2%	1%	2%	2%	3%	2%
Total	100%	100%	100%	100%	100%	100%

Note: I = study strategies, II = homework completion, III = exam preparation, IV = the way listening to the class, V= study support.

The study habits exhibited by students were categorized according to the evaluation criteria recommended by the original author of the inventory used. In this regard, a positive trend (+) was found in 54% of students, with some inclination towards the negative trend (-), demonstrating that most students have not efficiently developed their study methods.

As for Dimension I (study strategies), most students have not yet acquired them, and many do not employ techniques such as underlining, paraphrasing, constant review, or searching for reliable information. Instead, they rely heavily on memory and only study for exams.

In dimension II, homework completion, there is a positive trend (+) due to the large number of homework assignments per subject, which leads to frustration in completing them. As a result, students often resort to copying without paraphrasing and do not prioritize the difficulty of the assignments.

In Dimension III (exam preparation), many students study only a few days before the exam, without covering all the topics. In many cases, they rely on luck, classmates, or the possibility that the exam will be postponed due to unforeseen circumstances.

Dimension IV (the way of listening to the class), the positive trend (+) indicates that students mostly try to take notes, are easily distracted mainly by cell phone use, have low participation, and easily fall into boredom.

Finally, in Dimension V (study support), there is a focus on maximum concentration for understanding and learning. However, most students study while listening to music, watching television, and, most notably, checking social media, indicating a concentration lack.

Table 2. Level of academic performance.

Variable	Nivel			Total
	High performance	Intermediate performance	Low performance	
Academic performance	8%	64%	28%	100%

Table 3. Comparison of study habits and academic performance according to sex.

Variables	Men (n= 228)	Women (n= 372)	Statistical test		rbis
	Average Range	Average Range	U	p	
Study habits	47.02	51.36	110421.0	0.000	0.11
Academic performance	47.11	51.08	109212.0	0.000	0.18

Note: n = sample size; M = Medium; U = Mann Whitney U; p = significance (0.05); rbis= biserial correlation (effect size).

The statistical data regarding the level of academic performance, as perceived by university students, are described in the table. It was found that 64% of students consider their level to be regular, 28% perceive it as low, and 8% believe it to be high. The performance rating is primarily attributed to personal factors such as academic stress and self-motivation. In

addition, students report that the lack of an academic plan has not reinforced their study methods, leading them to study by compulsion, which has a significant impact on their performance. Moreover, many students feel that the curriculum design and subject content are repetitive, and the teaching methods employed by instructors often lack pedagogical effectiveness in transmitting knowledge.

When comparing the results of study habits and academic performance according to the sex variable, statistically significant differences were found, with female students obtaining better scores than male students. Therefore, women are more organized and use better study techniques and methods. In addition, they show greater concern, commitment, and responsibility toward their studies, giving better academic results than men.

Table 4. Comparison of study habits and academic performance by area of study.

Variables	Program 1 (n= 200)	Program 2 (n=200)	Program 3 (n= 200)	Statistical test		ϵ^2
	Average Range	Average Range	Average Range	H	p	
Study habits	52.27	47.46	50.46	5.111	0.000	0.021
Academic performance	52.52	47.55	51.45	5.321	0.000	0.026

Note: N= sample; H= Kruskal Wallis statistician; p= significance (0.05); ϵ^2 = Epsilon squared (effect size).

The comparison results between study habits and academic performance were analyzed based on the students' study programs. Statistically significant differences were found for both variables, particularly among students in program 1, who obtained the highest scores. Post-hoc tests confirmed this distinction. This group stands out from the others in terms of their organization, study methods, and utilization of techniques that effectively enhance academic performance.

Table 5. Correlation between study habits and academic performance.

Spearman's Rho		Study habits	Academic performance
Study habits	Correlation coefficient	1.000	0.417**
	Sig. (bilateral)	.	0.000
	N	600	600
Academic performance	Correlation coefficient	0.417**	1.000
	Sig. (bilateral)	0.000	.
	N	600	600

Note: **. The correlation is significant at the 0.01 level (2-tailed).

The study habits variable was correlated with academic performance, revealing a statistically significant correlation of medium strength ($r = 0.417$, $p = 0.000$), indicating a direct

relationship with a reliability of 99%. This suggests the hypothesis: the stronger the development of study habits in students, the better their academic performance will be.

Conclusion

The results of this study imply a correlation between study habits and academic performance, in line with previous research conducted in Peru (Najarro, 2020; Soto & Rocha, 2020; Orna & Carlos, 2022). Thus, it can be inferred that improving students' study habits possibly enhances their academic achievements.

Participants often face difficulties in their study habits due to inadequate planning, ineffective techniques implemented, and insufficient dedication to studying—fundamental aspects of professional development. Therefore, support programs should be established to strengthen study habits and address these challenges.

Students with better study habits, particularly women, tend to perform better academically due to the presence of a comprehensive plan integrating study schedules and techniques, effective information-seeking behaviors, and improved writing skills, all of which significantly influence academic performance.

Enhanced academic performance is anticipated as students cultivate positive study habits, including meticulous recording and organization of information, active engagement in class with minimal distractions, and strategic plans to oversee and commit to their professional advancement.

Teachers wield a pivotal influence on student performance. Therefore, it is imperative to bolster their pedagogical skills and competencies to enrich the teaching-learning process and inspire students to achieve superior academic outcomes.

It is advisable to conduct further research on the pertinent variables using wider and more diverse sample sizes across various universities. Robust statistical analyses will yield a deeper comprehension of the genuine interplay between the variables. University administrations should consider these findings in implementing and improving academic support initiatives.

REFERENCE

- Arroyo-Ramirez, F., Rojas-Bolívar, D., Bardalez-García, B., Bravo-Vásquez, M., Yon-Leau, C., & Recuenco, S. (2021). Perception of the educational environment and academic performance in medical students at a Peruvian public university. *FEM: Magazine of the Medical Education Foundation*, 24(2), 105-106. <https://dx.doi.org/10.33588/fem.242.1119>
- Bedregal-Alpaca, N., Tupacyupanqui-Jaén, D., & Cornejo-Aparicio, V. (2020). Analysis of the academic performance of Systems Engineering students, possibilities of dropping out, and proposals for their retention. *I will engineer. Journal Chilean Engineering*, 28(4), 668-683. <https://dx.doi.org/10.4067/S0718-33052020000400668>
- Botina Moreano, J. J. (2021). Bad habits adopted by students during virtual classes. *Journal University Computer Science RUNIN*, 8(11), 35-40. <https://revistas.udenar.edu.co/index.php/runin/article/view/6724>

- Calizaya-López, J., Pinto-Pomareda, H., Lazo-Manrique, M. C., Bellido-Medina, R., Miaury Vilca, A. R., & Ceballos-Bejarano, F. (2022). Comparison of Academic Stress in Students of Public and Private Universities in Peru. *Journal of Higher Education Theory and Practice*, 22(18). <https://doi.org/10.33423/jhetp.v22i18.5697>
- Chambi-Choque, A.M., Manrique, J., & Espinoza-Moreno, T. (2020). Learning styles and academic performance in nursing interns at a Peruvian Public University. *Journal of the Faculty of Human Medicine*, 20(1), 43-50. <https://dx.doi.org/10.25176/rfmh.v20i1.2546>
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159. <https://doi.org/10.1037/0033-2909.112.1.155>
- Domínguez-Lara, S. (2018). Magnitude of the effect, a quick guide. *Medical Education*, 19(4), 251-254. <https://doi.org/10.1016/j.edumed.2017.07.002>
- Gallegos, A., Ganga-Contreras, F., Castillo, J., Teodori de la Puente, D., & Abensur, C. (2021). Inequity and inequality; bases for a new educational proposal in Peru. *Contemporary Dilemmas: Education, Politics and Values*, 9(1). <https://doi.org/10.46377/dilemas.v9i1.2864>
- La Serna-Solari, P.B., Castillo-Cornock, T.B., & Viera-Quijano, Y.G. (2023). Anxiety, self-esteem and study habits in relation to the academic performance of Peruvian university students: Covid-19 context. *Advances in Odontostomatology*, 39(1), 2-8. http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0213-12852023000100002&lng=es&tlng=es
- Martínez, J., Ferrás, Y., Bermúdez, L., Ortiz, Y., & Pérez, E. (2020). Academic performance in students Vs factors that influence their results: a relationship to consider. *EDUMECENTRO*, 12(4), 105-121. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2077-28742020000400105&lng=es&tlng=e
- Najarro Vargas, J. (2020). Study habits and their relationship with the academic performance of second-year students at the Professional School of Medicine of the National University of San Marcos, Peru. *Conrado*, 16(77), 354-363. <https://conrado.ucf.edu.cu/index.php/conrado/article/view/1607>
- Orna, L. A., & Carlos, V. G. (2022). Study habits and academic performance in foreign language students. *Challenges*, 13(1), 17–24. <https://doi.org/10.37711/desafios.2022.13.1.364>
- Rebaza, K. (2016). Psychometric properties of the study habits inventory in students from the province of Otuzco. Thesis. Cesar Vallejo University, Lima.
- Ruiz-Segarra, M. I. (2021). Test anxiety and study habits in higher education. *Horizons. Journal of Research in Educational Sciences*, 4(16), 461–468. <https://doi.org/10.33996/revistahorizontes.v4i16.129>
- Salamea-Nieto, R. M., & Cedillo-Chalaco, L. F. (2021). Study habits and motivation for learning in university students. *INNOVA Research Journal*, 6(3.1), 94–113. <https://doi.org/10.33890/innova.v6.n3.1.2021.1858>
- Soto, W., & Rocha, N. (2020). Study habits: a crucial factor for good academic performance. *Journal Innova Education*, 2(3), 431-445. <https://doi.org/10.35622/j.rie.2020.03.004>
- Toro, R., Peña-Sarmiento, M., Avendaño-Prieto, B., Mejia-Velez, S., & Bernal-Torres, A. (2022). Empirical Analysis of Cronbach's Alpha Coefficient as a Function of Question Response Options,

Sample Size and Outliers. Ibero-American Journal of Diagnosis and Evaluation, 2(63).
<https://www.redalyc.org/journal/4596/459671926003/html/>
Vicuña, L. (2014). Study Habits Inventory CASM 85-R-2014. Peru: Grafi-K-Gr