



Exploring Academic Skills: A Study of Learning Strategies Among Local College Students

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Abstract. This study examined students' learning strategies in a local college, focusing on their strategy for studying, note-taking, reading comprehension, writing, test-taking, time management, and organizational techniques—descriptive comparative research using descriptive and comparative methods to examine school motivation and learning strategies of students in a local college. The findings suggest that, while students generally demonstrate moderate proficiency in various learning strategies, there are areas for improvement. Furthermore, a comparative analysis was conducted among sexes, year levels, and assigned colleges, wherein significant differences in learning strategies were identified and discussed. In conclusion, although local college students demonstrate moderate proficiency in various academic skills, there is room for improvement, particularly in the consistent application of advanced techniques and gender-based disparities in learning strategies. Addressing these areas is discussed in this study.

Keywords: *learning strategies, local college*

INTRODUCTION

Developing academic skills may improve learning capacity, including taking tests, connecting with other students, and completing tasks. Academic skills are the abilities, methods, and habits that enable students to excel academically, building on their knowledge of literacy and technical subjects. Many of these abilities apply to various aspects of life, particularly professional contexts. Academic talent includes writing and speaking, listening, taking notes, reasoning, technical literacy, and attention to detail (Indeed Editorial Team, 2023). Academic skills are essential for university success because they improve communication, critical thinking, and independence (Broders, 2020). These abilities are especially crucial in multidisciplinary studies, allowing students to integrate and question knowledge (Gaast et al., 2019). Using scientific approaches to learning can boost academic performance capabilities, such as cognitive, social, and self-management abilities (Motlan et al., 2019). However, many students need more efficient study abilities, attention, and exam preparation, which are especially critical for academic success (Van et al., 2022).

Research continuously reveals the critical impact of learning techniques on academic success (Shehzad, 2019; Tuckman, 2003; Weinstein et al., 2011; Thomas & Rohwer,



1986). These methods, which comprise cognitive and metacognitive approaches, are influenced by students' accomplishment goals and significantly impact their academic performance (Shehzad, 2019). Training in such strategies has been demonstrated to improve college students' performance (Tuckman, 2003), and they are also important for self-regulated learning, which is essential for academic preparation and success (Weinstein et al., 2011). Furthermore, learning procedures' specificity, generativity, executive monitoring, and personal efficacy influence study effectiveness (Thomas & Rohwer, 1986). Furthermore, several significant studies on the role of learning strategies in academic success have comprehensively described these constructs. Mazzetti et al. (2020) discovered that learning strategies improve GPA by increasing future orientation, especially among students with high or medium academic self-efficacy. Xu et al. (2021) found that self-testing, scheduling, and idea maps were helpful tools for enhancing academic performance. Jamaluddin et al. (2021) emphasized using appropriate learning strategies to achieve good learning outcomes. Silva et al. (2021) emphasized the importance of identifying and using these techniques to help students succeed in their academic courses. These findings demonstrate the vital role of learning strategies in enhancing students' academic skills and performance.

In addition, many studies have been conducted on the learning strategies used by college students (Schunk et al., 2012; Freeman et al., 2014; Seo & Milstein, 2020; D. Johnson & R. Johnson, 2018; Chen & Usher, 2021). Active learning has become a popular strategy, with research highlighting its potency in fostering greater comprehension and knowledge retention (Freeman et al., 2014; Chen & Usher, 2021). Researchers have focused on metacognition, investigating how students engage in self-regulatory activities, such as goal-setting and progress monitoring (Schunk et al., 2012; Dunlosky & Metcalfe, 2019). The advantages of participating in group discussions, peer teaching, and joint projects have come to light in collaborative learning (D. Johnson & R. Johnson, 2018). Additionally, research incorporating digital technologies and online resources to enhance students' access to educational content has played a crucial role in altering their learning experiences (Seo & Milstein, 2020; Chen & Usher, 2021). Overall, this literature review sheds light on the variety of learning techniques of college students and their consequences for academic achievement.

Learning strategies significantly predict student achievement, particularly those related to memory and metacognition (Almoslamani, 2022), and effective learning strategies are essential for academic success and motivation. Research has shown that students who use effective learning strategies feel more motivated to learn, perform better on examinations, and are more likely to acquire and retain information (Baker & Brown, 1984).

However, the learning process for every student varies, even within the same educational environment. Students do not learn at the same level of quality, and not all learning strategies are equally effective. It is also essential to consider the different courses in which these strategies are applied. Kim and Lee (2021) find that other courses may require different learning strategies for success. Therefore, it is essential to identify and understand the most effective learning strategies for individual students and their



courses.

Over the past several years, many studies have been conducted on learning strategies college students use (Schunk et al., 2012; Freeman et al., 2014; Seo & Milstein, 2020; D. Johnson & R. Johnson, 2018; Chen & Usher, 2021). Active learning has become a popular strategy, with research highlighting its potency in fostering greater comprehension and knowledge retention (Freeman et al., 2014; Chen & Usher, 2021). Researchers have focused on metacognition as they have investigated how student self-regulatory activities, such as goal-setting and progress monitoring, affect academic success (Schunk et al., 2012; Dunlosky & Metcalfe, 2019). The advantages of participating in group discussions, peer teaching, and joint projects have come to light in collaborative learning (D. Johnson & R. Johnson, 2018). Additionally, research concentrating on incorporating digital technologies and online resources to enhance students' access to educational content has played a crucial role in altering their learning experiences (Chen & Milstein, 2020; Chen & Usher, 2021). Overall, this literature review sheds light on various college students' learning techniques and their consequences for academic achievement. A significant area of education research focuses on the connection between learning strategies (Jiang, 2017; Dörnyei, 2021; Pintrich, 2004). Learning strategies include students' methods and procedures to improve their learning results.

In contrast, motivation is a psychological process that propels and sustains individuals' behavior towards reaching specific goals (Ryan & Deci, 2021). Learning strategies significantly predict student achievement, particularly those related to memory and metacognition (Almoslamani, 2022), and effective learning strategies are essential for academic success and motivation. Research has shown that students who use effective learning strategies feel more motivated to learn, perform better on examinations, and are more likely to acquire and retain information (Baker & Brown, 1984). However, the learning process for every student varies, even within the same educational environment. Students do not learn at the same level of quality, and not all learning strategies are equally effective. It is also essential to consider the different courses in which these strategies are applied. Kim and Lee (2021) found that different courses may require different learning strategies for success. Therefore, it is essential to identify and understand the most effective learning strategies for individual students and their courses.

In this study, the School Motivation and Learning Strategies inventory is used to measure learning strategies among college students, and it is geared towards evaluating students' study skills, learning strategies, and academic motivation. The School Motivation and Learning Strategies Inventory (SMALSI) is an assessment tool designed to identify poor learning strategies and a lack of motivation that can impact school performance (Learning Strategies Inventory, n.d.). It evaluates children's and adults' study skills, learning strategies, and academic motivation. This inventory is a quick and cost-effective way to identify students needing support to develop more effective learning strategies (Creative Organizational Design, 2022). The SMALSI measures various factors related to academic motivation and different learning tactics, such as time management,



organizational skills, focus and attention, writing and research abilities, and test-taking techniques (Jeary et al., 2006). In improving such learning strategies, students can benefit from direct instruction, which has been empirically researched and indicates positive outcomes when learning strategies are improved (Hughes et al., 1993; Mastropieri & Scruggs, 1997; Lenz & Hughes, 1990).

This study focuses on local college students' learning strategies to navigate academic challenges successfully. It attempts to reveal the numerous strategies, methods, and habits students use in their attempts at academic success at the local college level by analyzing their learning strategies. This study aims to delve into the academic environment of local college students in Pampanga, the Philippines, emphasizing their learning strategies to identify academic skills. First, it explores various learning strategies to improve academic performance. Second, the study examines how demographic variables such as age, gender, and academic significance influence the selection and effectiveness of learning strategies. Finally, based on the findings, the study makes recommendations for improving academic skills and learning methodologies among local college students in Pampanga. In improving such learning strategies, students can benefit from direct instruction, which is empirically researched and indicates positive outcomes when learning strategies are improved (Hughes et al., 1993; Mastropieri & Scruggs, 1997; Lenz & Hughes, 1990). By understanding learning strategies based on different courses, educators can integrate and improve how they teach and contribute to the field of education.

Further research can provide valuable insights for teachers, students, and educational institutions. Based on a literature review, limited research has been conducted on learning strategies in the context of students in local colleges. This study aims to understand the 1st-year and 2nd-year college students and determine whether the variables differ in their year level, gender, and assigned college.

In line with this, answers were sought to the following questions:

1. How may the participants be described in terms of:
 - a. Sex
 - b. Year Level
 - c. Degree Tracks
2. How may the participants be described in the School Motivation and Learning Strategies inventory on the following subscale?
 - a. Study strategies (STUDY);
 - b. Note-taking / Listening skills (NOTE);
 - c. Reading / Comprehension (READ);
 - d. Writing / Research skills (WRITE);
 - e. Test-taking strategies (TEST);
 - f. Time management / Organization techniques (TIMORG)?
3. Is there a significant difference in the following subscales:
 - a. Study strategies (STUDY);
 - b. Note-taking / Listening skills (NOTE);
 - c. Reading / Comprehension (READ);



- d. Writing / Research skills (WRITE);
 - e. Test-taking strategies (TEST);
 - f. Time management /
 - g. Organization techniques (TIMORG) in terms of sex?
4. Is there a significant difference in the following subscales:
- a. Study strategies (STUDY);
 - b. Note-taking / Listening skills (NOTE);
 - c. Reading / Comprehension (READ);
 - d. Writing / Research skills (WRITE);
 - e. Test-taking strategies (TEST);
 - f. Time management
 - g. Organization techniques (TIMORG) in terms of year level?
5. Is there a significant difference in the following subscales:
- a. Study strategies (STUDY);
 - b. Note-taking / Listening skills (NOTE);
 - c. Reading / Comprehension (READ);
 - d. Writing / Research skills (WRITE);
 - e. Test-taking strategies (TEST);
 - f. Time management /
 - g. Organization techniques (TIMORG) in terms of the degree tracks?

Hypotheses

Ha1. There is a significant difference in the following subscales: study strategies (STUDY), NOTE, taking / Listening skills (NOTE); Reading / Comprehension (READ), writing/research skills (WRITE), test-taking strategies (TEST), and time management/organization techniques (TIMORG) in terms of sex.

Ho1. There is no significant difference in the following subscales: study strategies (STUDY), note-taking/listening skills (NOTE), reading/comprehension (READ), writing/research skills (WRITE), test-taking strategies (TEST), and time management/organization techniques (TIMORG) in terms of sex.

Ha2. There is a significant difference in the following subscales: study strategies (STUDY), NOTE, taking / Listening skills (NOTE); Reading / Comprehension (READ), writing/research skills (WRITE), test-taking strategies (TEST), and time management/organization techniques (TIMORG) in terms of year level?

Ho2. There is no significant difference in the following subscales: study strategies (STUDY); note-taking/listening skills (NOTE); reading/comprehension (READ); writing/research skills (WRITE); test-taking strategies (TEST); time management/organization techniques (TIMORG) in terms of year level?

Ha3. There is a significant difference in the following subscales: study strategies (STUDY), NOTE, taking / Listening skills (NOTE); Reading / Comprehension (READ), writing/research skills (WRITE), test-taking strategies (TEST), and time



management/organization techniques (TIMORG) in terms of the degree tracks?

Ho3. There is no significant difference in the following subscales: study strategies (STUDY); note-taking/listening skills (NOTE); reading/comprehension (READ); writing/research skills (WRITE); test-taking strategies (TEST); time management/organization techniques (TIMORG) in terms of the degree tracks?

Research Objective

To improve teaching methods and advance the field of school psychology, this study intends to address the significant implications of understanding student motivation and identifying practical approaches to learning in various academic courses. Adopting improved teaching tactics built on a deep understanding of student motivation and learning strategies could provide additional information on student dynamics in learning. The School Motivation and Learning Strategies Inventory (SMALSI), which received little attention in the literature, has a research gap that needs to be addressed. This research aims to understand the learning methodologies used by understudied first-year and second-year college students.

Additionally, this study investigates potential differences in these learning and motivating strategies depending on the academic year level, sex, and particular institution/department attended by the students. The study's goals include thoroughly investigating the strategies that affect students' motivation, studying the successful learning tactics used in various courses, and determining whether these findings can supplement teaching strategies. By providing practical advice based on empirical findings, this study seeks to enhance the field of psychology and counseling and provide educators and students with insightful information. This study seeks to improve educational standards and enhance teaching and learning by examining and illuminating the complex interactions between student motivation, learning strategies, and academic performance.

METHOD

The study used descriptive statistics, an independent sample t-test, and an analysis of variance approach to compare students' learning strategies in a local college.

Population and Sample

The study participants were 971 college students from 1st and 2nd-year students from a local college. The study used census sampling, in which all participating students were included.

Data Collection Tools

The School Motivation and Learning Strategies Inventory (SMALSI) effectively detects



and improves weak learning methods that hinder academic performance. Issues such as poor study skills, ineffective learning tactics, and exam anxiety can be addressed proactively using the SMALSI, preventing students from becoming discouraged, failing coursework, or dropping out. Individuals or groups can answer the instrument in approximately 20 to 30 minutes, and it serves as a preventative step for academic failure. The SMALSI is appropriate for people aged 8 to 18, with a separate College/University Form accessible to university students. According to the product description, the SMALSI examines ten constructs that are reliably connected with academic motivation, learning strategies, and study habits. These include study strategies, note-taking/listening skills, reading/comprehension tactics, writing/research skills, test-taking strategies, organizational techniques, time management, academic motivation, test anxiety, and concentration/attention. The reliability coefficient of SMALSI ranges from 0.77 to 0.91 across ten constructs (Jeary et al., 2006). This study used seven constructs (study strategies, note-taking/listening skills, reading/comprehension tactics, writing/research skills, test-taking strategies, organizational techniques, and time management) to identify students' learning strategies in a local college.

Data Analysis

In analyzing the data, the mean and standard deviation were used to determine the School Motivation and Learning Methods through seven subscales: study strategies, note-taking/listening skills, reading/comprehension tactics, writing/research skills, test-taking strategies, organizational techniques, and time management. An independent-sample test was conducted to compare seven subscales of school motivation and learning methods on sex and year levels. Analysis of variance (ANOVA) was used to compare the seven subscales of school motivation and learning strategies in terms of the college assigned to the participants.

RESULTS AND DISCUSSION

Table 1. *Participants' Profile in Terms of Sex*

	Frequency	Percentage
Sex		
Female	633	65.2 %
Male	338	34.8%
Total	971	100 %
Year Level		
1st Year	160	16.5%
2nd Year	811	83.5%
Total	971	100 %
Degree Tracks		
Business and Management	299	30.8%
Computing Studies	175	18%
Education, Arts, and Sciences	497	51.2%



Total	971	100%
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Table 1 includes 971 college students who participated in the study. The participants comprised 65.2% (633) females and 34.8% (338) males which belonged to different tracks and year levels. Regarding year level, 16.5% (160) of the participants were in their first year, while the majority of the participants (83.5% (811) were in their second year. In terms of degree tracks, the Business and Management degrees accounted for 30.8% (299) of the participants, followed by the Computing Studies degrees with 18% (175), and the Education, Arts, and Sciences degrees with the highest representation of 51.2% (497).

Table 2. *Participants' School Motivation and Learning Strategies Inventory on College Students' Strengths Scales*

College Student Strengths	Mean	Standard Deviation
Study Strategies	28.56	6.40
Note taking / Listening skills	31.08	9.36
Reading Comprehension	21.39	6.40
Writing / Research Skills	18.06	6.15
Test-taking Strategies	28.13	7.77
Time Management /	26.75	8.20
Organization Techniques	30.64	7.37

Table 2 describes the School Motivation and Learning Strategies Inventory for College Students' Strengths. According to the School Motivation and Learning Strategies Inventory administration and interpretation manual (Jeary et al., 2006), the mean scores of the college students' strengths scales can be described as follows: for Study Strategies, the mean score ($m = 28.56$) has a standard deviation of 6.40, participants exhibit an average description wherein students in local colleges sometimes plan well for studying, moderately rehearse their learning, and sometimes look for important materials in learning (Jeary et al., 2006). On note-taking/listening skills, the mean score was $m = 37.08$ with a standard deviation of 9.36. Based on the results, participants demonstrated well-developed note-taking and listening skills. They can plan their note-taking process, develop strategies, are good listeners, and usually identify important lecture points (Jeary et al., 2006). Regarding Reading Comprehension, participants showed an average development based on a mean score of $m = 21.39$ with a standard deviation of 6.40. On an average level, they can apply strategies for comprehension and sometimes use advanced organizers or other advanced techniques (Jeary et al., 2006).

As to writing/research skills, the results showed a mean score of $m = 18.06$, with a standard deviation of 6.15. It indicates that the participants had average development in writing and research skills. It demonstrated that participants have an average use of search and reference materials, and sometimes use outlines or other advanced organizers (Jeary et al., 2006). Regarding Test-taking strategies, the results showed a mean score of 28.13, with a standard deviation of 7.77. The participants developed average test-taking strategies (Jeary et al., 2006).



In terms of time management, results show that participants have a mean score of 26.75 with a standard deviation of 8.20. This indicates that participants exhibit moderate development of their time management abilities. They possess average skills in managing and allocating time, maintaining schedules, but do so inconsistently, and demonstrate a degree of planning, although it may only sometimes be consistent (Jeary et al., 2006). Finally, on organization techniques, the results show that the participants demonstrated moderate development in organizing and managing study materials, notes, study space, and tracking materials. Their skills in these areas are at an average level.

Table 3. *Significant Difference on Female and Male in Terms of their Study Strategies*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	28.86	7.66	-1.50	597.85	.001	Accept Ha
Male	338	27.99	9.04				

Note: $n=971$

The 633 female college students had a greater mean ($m=28.86$, $SD=7.66$) than the 338 male college students ($m=27.99$, $SD=9.04$). The t-test shows that there is a significance of $t(971) = -1.50$, $p(0.001) < 0.05$. In other words, females differed significantly from males in their study strategies.

Table 4. *Significant Difference on Female and Male in Terms of Their Note Taking/Listening Skills*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	31.98	10.23	-3.95	601.92	.002	Accept Ha
Male	338	29.39	8.74				

Note: $n=971$

The 633 female college students had a greater mean ($m=31.98$, $SD=10.23$) than the 338 male college students ($m=29.39$, $SD=8.74$). The t-test shows that there is a significance of $t(971) = -3.95$, $p(0.002) < 0.05$. In other words, females differed significantly from males in their study strategies. Both mean scores describe average development in note-taking and listening skills, but are significantly different in mean scores.

Table 5. *Significant Difference on Female and Male in Terms of Their Reading/Comprehension Strategies*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	20.73	6.729	-2.283	641.192	.101	Reject Ha
Male	338	21.74	6.196				

Note: $n=971$

The 633 female college students have a mean value of ($m=20.73$, $SD=6.729$) and 338 male college students ($m=21.74$, $SD=6.196$). The t-test showed that there was no significance, $t(971) = -2.283$, $p(0.101) > 0.05$. In other words, there were no significant differences between the male in their reading and comprehension strategies. Both mean scores describe the average development in reading and comprehension strategies,



consistently describing no significant difference in their mean scores.

Table 6. *Significant Difference on Female and Male in Terms of their Writing/Research Skills*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	18.12	5.96	-3.72	638.79	.216	Reject Ha
Male	338	17.96	6.50				

Note: $n=971$

The 633 female college students had a mean value of $m=17.96$, $SD=6.50$, and 338 male college students had a mean value of $m=18.12$, $SD=5.96$. The t-test showed that there was no significance, $t(971) = -3.72$, $p(0.216) > 0.05$. Both mean scores describe the average development in writing and research skills, consistently describing no significant difference in mean scores.

Table 7. *Significant Difference on Female and Male in Terms of their Test-taking Strategies*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	28.99	7.38	-4.64	628.19	.011	Reject Ha
Male	338	26.51	8.21				

Note: $n=971$

The 633 female college students had a mean value of ($m=28.99$, $SD=7.38$), and 338 male college students had a mean value of ($m=26.51$, $SD=8.21$). The t-test showed that there was no significance, $t(971) = -4.64$, $p(0.011) > 0.05$. Both mean scores describe the average development in test-taking strategies, consistently describing no significant difference in mean scores.

Table 8. *Significant Difference on Female and Male in Terms of their Time Management*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	27.15	7.69	-1.97	600.62	.001	Accept Ha
Male	338	26.01	9.03				

Note: $n=971$

The 633 female college students had a greater mean ($m=27.15$, $SD=7.69$) than the 338 male college students ($m=26.01$, $SD=9.03$). The t-test shows that there is a significance of $t(971) = -1.97$, $p(0.001) < 0.05$. In other words, females significantly differed from males in time management. Both mean scores describe average development in time management skills, but are significantly different in mean scores.



Table 9. *Significant Difference on Female and Male in Terms of their Organizational Techniques*

Sex	n	Mean	SD	t	df	p	Decision
Female	633	31.43	7.223	-4.534	671.195	.912	Reject Ha
Male	338	29.18	7.437				

Note: $n=971$

The 633 female college students had a mean value of ($m=31.43.15$, $SD=7.223$), and 338 male college students had a mean value of ($m=29.18$, $SD=7.437$). The t-test showed that there was no significance, $t(971) = -4.534$, $p(.912)>0.05$. Both mean scores describe the average development in organizational techniques, consistently describing no significant difference in mean scores.

Table 10. *Significant Difference in Year Level in Terms of Study Strategies*

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	30.03	7.56	2.642	240.18	.509	Reject Ha
Year 2	811	28.27	8.26				

The 160 Year 1 college students have a mean value of ($m=30.03$, $SD=7.56$), and 811 Year 2 college students have a mean value of ($m=28.27$, $SD=8.26$). The t-test showed that there was no significance, $t(971) = 2.642$, $p(0.509)>0.05$. Both mean scores describe the average development in the study strategies, consistently describing no significant difference in mean scores.

Table 11. *Significant Difference in Year Level in Terms of Note-Taking/Listening Skills*

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	32.45	8.66	2.153	240.473	.241	Reject Ha
Year 2	811	30.81	9.48				

The 160 Year 1 college students had a mean value of ($m=32.45$, $SD=8.66$), and 811 Year 2 college students had a mean value of ($m=30.81$, $SD=9.48$). The t-test showed that there was no significance, $t(971) = 2.153$, $p(0.241)>0.05$. Both mean scores describe the average development in note-taking and listening, consistently describing no significant difference in mean scores.

Table 12. *Significant Difference in Year Level in Terms of Reading Comprehension*

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	22.26	5.95	1.99	239.433	.128	Reject Ha
Year 2	811	21.22	6.45				

The 160 Year 1 college students had a mean value of ($m=22.26$, $SD=5.95$), and the 811 Year 2 college students had a mean value of ($m=21.22$, $SD=6.45$). The t-test showed that there was no significance, $t(971) = 1.99$, $p(0.128)>0.05$. Both mean scores describe the average development in reading comprehension, consistently describing no significant difference in mean scores.



Table 13. Significant Difference in Year Level in Terms of Writing Research Skills

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	18.55	6.36	1.07	220.804	.513	Reject Ha
Year 2	811	17.97	6.11				

The 160 Year 1 college students had a mean value of ($m=18.55$, $SD=6.36$), and 811 Year 2 college students had a mean value of ($m=17.97$, $SD=6.11$). The t-test showed that there was no significance, $t(971) = 1.07$, $p(0.513) > 0.05$. Both mean scores describe the average development in reading comprehension, consistently describing no significant difference in mean scores.

Table 14. Significant Difference in Year Level in Terms of Test-taking Strategies

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	29.28	6.98	1.23	246.461	.029	Accept Ha
Year 2	811	27.90	7.90				

The 160 Year 1 college students had a greater mean ($m=29.28$, $SD=6.98$) than the 811 male college students ($m=27.90$, $SD=7.90$). The T-test shows that there is a significance of $t(971) = 1.23$, $p(0.029) > 0.05$. In other words, Year 1 participants significantly differed from Year 2 participants in the test-taking strategies. Both mean scores describe average development in test-taking strategies but are significantly different in mean scores.

Table 15. Significant Difference in Year Level in Terms of Time Management

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	28.30	7.69	2.75	237.342	.263	Reject Ha
Year 2	811	26.45	8.26				

The 160 Year 1 college students had a mean value of ($m=28.30$, $SD=7.69$), and the 811 Year 2 college students had a mean value of ($m=26.45$, $SD=8.26$). The t-test showed that there was no significance, $t(971) = 2.75$, $p(0.263) > 0.05$. Both mean scores describe the average development in time management, consistently describing no significant difference in mean scores.

Table 16. Significant Difference in Year Level in Terms of Organizational Techniques

Year Level	n	Mean	SD	t	df	p	Decision
Year 1	160	32.45	6.99	3.54	234.761	.540	Reject Ha
Year 2	811	30.29	7.40				

The 160 Year 1 college students had a mean value of ($m=32.45$, $SD=6.99$), and 811 Year 2 college students had a mean value of ($m=30.29$, $SD=7.40$). The t-test showed that there was no significance, $t(971) = 3.54$, $p(0.540) > 0.05$. Both mean scores describe the average development in organizational techniques, consistently describing no significant difference in mean scores.



Table 17. *Analysis of Variance on the Significant Difference of Institutes in Terms of Study Strategies*

Degree Tracks	n	Mean	SD
Business and Management	497	29.11	8.14
Computing Studies	175	26.89	8.18
Education Arts and Sciences	299	28.62	8.12
Total	971	28.56	8.17

Dependent Variable: Study Strategies

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	644.399	2	322.199			
Within Groups	64,148.946	968	66.270	4.862	.008	Accept Ha
Total	64,793.345	970				

Table 17 shows the statistical significance of the ANOVA of degree tracks regarding study strategies, $F(4.862, 968) = 0.008 < p = 0.05$. Post hoc Scheffe's test showed that Education, Arts, and Sciences degrees ($m = 29.11$, $SD 8.14$) had a mean difference of 2.229, which is comparable to computing studies degrees ($m = 26.89$, $SD 8.18$) in terms of the study strategies of participants. However, the mean scores for Education, Arts and Sciences degrees, and computing studies degrees describe the same average development levels in their study strategies.

Table 18. *Analysis of Variance on the Significant Difference of Institutes in Terms of Note-taking and Listening Skills*

Degree Tracks	n	Mean	SD
Business and Management	497	32.18	8.136
Computing Studies	175	27.75	8.181
Education Arts and Sciences	299	31.21	8.124
Total	971	31.08	8.173

Dependent Variable: Note-taking and Listening Skills

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	2547.429	2	1273.715			
Within Groups	82505.143	968	85.233	14.944	.000	Accept Ha
Total	85052.573	970				

Table 18 shows the statistical significance of the analysis of variance of degree tracks about note-taking and listening skills, $F(14.944, 968) = 0.000 < p = 0.05$. Post hoc shows on the Scheffe test that Education Arts and Sciences Degrees ($m = 32.18$, $SD 8.136$) have a mean difference of 4.431, which is comparable to Computing Studies Degrees ($m = 27.75$, $SD 8.181$) in terms of participants' note-taking and listening skills. However, the mean scores for Education, Arts and Sciences Degrees, and Computing Studies Degrees describe the same average development levels in note-taking and listening skills.



Table 19. Analysis of Variance on the Significant Difference of Institutes in Terms of Reading/Comprehension Strategies

Degree Tracks	n	Mean	SD
Business and Management	497	21.97	6.439
Computing Studies	175	19.71	5.983
Education Arts and Sciences	299	21.39	6.423
Total	971	21.39	6.401

Dependent Variable: Reading/Comprehension Strategies

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	659.650	2	329.825			
Within Groups	39088.751	968	40.381	8.168	.000	Accept Ha
Total	39748.402	970				

Table 19 shows the statistical significance of the analysis of variance of institutes about reading/comprehension strategies, $F(8.168, 968) = 0.000 < p = 0.05$. Post hoc shows on the Scheffe test that Education Arts and Sciences Degrees ($m = 21.97$, $SD 6.439$) had a mean difference of 2.258, which is comparable to Computing Studies Degrees ($m = 19.71$, $SD 5.983$) in terms of reading/comprehension strategies of participants. However, the mean scores for Education Arts and Sciences Degrees and Computing Studies Degrees describe the same average development levels in their reading/comprehension strategies.

Table 20. Analysis of Variance on the Significant Difference of Institutes in Terms of Writing/Research Skills

Degree Tracks	n	Mean	SD
Business and Management	497	18.38	6.215
Computing Studies	175	17.27	5.947
Education Arts and Sciences	299	17.99	6.137
Total	971	18.06	6.151

Dependent Variable: Writing/Research Skills

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	161.124	2	80.562			
Within Groups	36541.168	968	37.749	2.134	.119	Reject Ha
Total	36702.292	970				

Table 20 shows no statistical significance of analysis of variance of institutes concerning writing/research skills, $F(2.134, 968) = .119 > p = 0.05$.



Table 21. *Analysis of Variance on the Significant Difference of Institutes in Terms of Test-taking Strategies*

Degree Tracks	n	Mean	SD
Business and Management	497	18.38	6.215
Computing Studies	175	17.27	5.947
Education Arts and Sciences	299	17.99	6.137
Total	971	18.06	6.151

Dependent Variable: Test-taking Strategies

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	848.830	2	424.415			
Within Groups	57638.589	968	59.544	7.128	.001	Accept Ha
Total	58487.419	970				

Table 21 shows the statistical significance of the ANOVA of institutes concerning test-taking strategies, $F(7.128, 968) = 0.001 < p = 0.05$. Post hoc shows on the Scheffe test that Education Arts and Sciences Degrees ($m = 28.68$, $SD 7.798$) had a mean difference of 2.524, which is comparable to Computing Studies Degrees ($m = 26.15$, $SD 7.552$) in terms of test-taking strategies of participants. However, the mean scores for Education, Arts and Sciences Degrees, and Computing Studies Degrees describe the same average development levels for their test-taking strategies.

Table 22. *Analysis of Variance on the Significant Difference of Institutes in Terms of Time Management*

Degree Tracks	n	Mean	SD
Business and Management	497	27.56	8.298
Computing Studies	175	24.68	8.439
Education Arts and Sciences	299	26.63	7.671
Total	971	26.75	8.196

Dependent Variable: Time Management

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	1076.583	2	538.292			
Within Groups	64076.601	968	66.195	8.132	.000	Accept Ha
Total	65153.184	970				

Table 22 shows the statistical significance of the ANOVA of degree tracks about time management, $F(8.132, 968) = 0.000 < P = 0.05$. Post hoc shows on the Scheffe test that Education Arts and Science Degrees ($m = 27.56$, $SD 8.298$) had a mean difference of 2.875, which is comparable to Computing Studies Degrees ($m = 24.68$, $SD 8.439$) in terms of time management of the participants. However, the mean scores for Education, Arts and Sciences Degrees, and Computing Studies Degrees describe the same average development levels in their time management.



Table 23. *Analysis of Variance on the Significant Difference of Institutes in Terms of Organizational Techniques*

Degree Tracks	n	Mean	SD
Business and Management	497	31.32	7.481
Computing Studies	175	28.50	7.124
Education Arts and Sciences	299	30.77	7.120
Total	971	30.64	7.373

Dependent Variable: Organizational Techniques

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	1036.503	2	518.251			
Within Groups	51692.206	968	53.401	9.705	.000	Accept Ha
Total	52728.709	970				

Table 23 shows the statistical significance of the ANOVA of degree tracks about organizational techniques, $F(9.705, 968) = 0.000 < p = 0.05$. Post hoc shows on the Scheffe test that Education Arts and Sciences Degrees ($m = 31.32$, $SD 7.481$) had a mean difference of 2.821, which is comparable to Computing Studies Degrees ($m = 28.50$, $SD 7.124$) in terms of the organizational techniques of participants. However, the mean scores of education, arts, and sciences degrees and degrees in computing studies describe the same average development levels in their organizational techniques.

DISCUSSION

The study's findings exhibit an average description wherein local college students sometimes plan well for studying, moderately rehearse their learning, and sometimes look for important learning materials (Jeary et al., 2006). This shows that using well-developed study and learning strategies, in addition to course materials, can improve college students' academic performance (Alexander & Murphy, 1999). Furthermore, students who have perfected these tactics display self-awareness and confidence, which are essential factors in reducing stress during exams and contributing to academic success (Lelis et al., 2021).

Concerning note-taking and listening skills, the results showed that college students demonstrated better note-taking and listening skills. They carefully prepare note-taking, use effective strategies, actively listen, and consistently pinpoint key ideas during lectures (Jeary et al., 2006). This is consistent with Lelis et al.'s (2021) results that note taking remains a common and favored approach among students despite technological developments. Furthermore, note-taking training can improve the quality and quantity of notes taken during academic listening tests (Kim, 2019).

Regarding reading comprehension, the results show that college students exemplify average development. On an average level, they can apply strategies for comprehension



and sometimes use advanced organizers or other advanced techniques (Jeary et al., 2006). Usually, the dynamics of college students' reading comprehension are identified by Liu et al. (2021), in which paraphrasing contributes to personal understanding, clarifies meanings by elaboration, and summarizes to build a consensus of information. To be consistent in comprehension, strategies such as skimming, scanning, making predictions, and questioning can make the reading process more understandable. Therefore, reading strategies must be improved to positively affect college students' reading comprehension (Banditvilai, 2020).

Furthermore, the findings revealed that students in local colleges have average writing and research skills. This means they use search and reference materials with moderate skills, occasionally using outlines or other advanced organizers (Jeary et al., 2006). This finding is consistent with Santelmann et al.'s (2018) emphasis on the importance of social support in writing and the ability to evaluate peers' papers using outlines and other advanced organizers, as defined by Jeary et al. (2006). It implies that research and writing skills can be developed through outlines and different methods of organizing thoughts, aided by supportive social conditions and the opportunity to evaluate peers' work.

Moreover, the results show that students in local colleges have attained a reasonable level of competency in their test-taking abilities. It indicates an average capacity to rule out strange responses, recognize key components in item stems, and efficiently use test time (Jeary et al., 2006). Furthermore, research conducted by Rafi and Islam (2020) provides strong evidence that methods including choice selection, question rereading, option understanding, response checking, option deliberation, and clue-finding techniques can develop test-taking strategies.

Regarding time management, the results showed that students in local colleges were only somewhat proficient in this area when thinking about study techniques. Students are average in time management and scheduling; they keep schedules but only sometimes follow them, and plan, but not consistently (Jeary et al., 2006). This confirms the study of KandhalYazhini et al. (2021) on the awareness of time management techniques among college students, wherein more than half showed only moderate time management skills. Furthermore, there is a call for successful time management in colleges to develop good time management habits (Tsitsia et al., 2021).

Lastly, on organizational techniques, the results show that students in local colleges exhibit a moderate level of keeping track of materials, notes, study areas, and study materials. This suggests that students use medium-time management, homework management skills, and intermediate strategies to arrange their work across disciplines (Jeary et al., 2006).

The significant difference between male and female college students in their study strategies was that females had significantly different study strategies from males, indicating that females have better study strategies than males. Female college students have more developed study strategies in which they can constantly establish plans, activate new study information, and have more enthusiasm for subject matter than male



college students, as per the findings in this study. This study confirms Unwalla's (2020) findings that females have better study habits than males. Furthermore, a related study by Kaldo and Unkun (2020) confirmed that female students tend to have more positive views on learning strategies.

Furthermore, the findings on significant differences between female and male college students show that females differ significantly from males in their note-taking and listening skills. This significant difference shows female college students demonstrate better note-taking and listening skills. Female college students carefully prepare for note-taking, use effective strategies, actively listen, and consistently pinpoint key ideas during lectures. The results show that college students demonstrate better note-taking and listening skills than male students. This aligns with the findings of Saragih (2018) in terms of note-taking, wherein females were better at writing recount texts than male students. Female college students have better listening skills and stronger auditory processing than male college students (Cunandar, 2020; Berchicci et al., 2020).

Regarding time management, the significant findings for female college students differ dramatically from those of male college students. Even if both groups' time management skills are average, as per the description (Jeary et al., 2006), their mean scores show a noticeable difference. This highlights that despite the perceived differences, male and female college students describe similar approaches to time management and scheduling, even though these skills may not be used consistently. This confirms a related study in the meta-analysis by Aeon et al. (2021). They found a slight difference in time management between males and females, with women managing time better than men.

Additionally, there was a notable distinction in test-taking techniques between Year 1 and Year 2 college students. Although the test-taking strategies of both groups developed on average, there was a significant difference in their mean results. This indicates an average capacity to rule out strange responses, recognize key components in item stems, and efficiently use test time (Jeary et al., 2006) among Year 1 and Year 2 college students. This result supports a study by Nedjat-Haiem and Cooke (2021), who discovered that students use various techniques, including planning answers and time management, when responding to open-ended questions.

In comparing students' assigned colleges, the variance analysis showed significant differences. Education, Arts and Sciences degrees differ significantly from Computing Studies degrees, analyzing the mean difference in study strategies. However, the mean scores were the same as the average development level in the study strategies. This implies that students at both colleges are known to arrange their studies occasionally effectively, rarely rehearse their lessons, and sometimes actively seek out necessary material (Jeary et al., 2006).

Furthermore, the analysis of the variance of colleges concerning note-taking and listening skills was significant. Education, Arts and Sciences degree students are comparable to Computing Studies degree students in note-taking and listening skills. However,



Education, Arts, and Sciences degrees and computing studies degrees mean scores describing the same average development levels in note-taking and listening skills. This indicates that students at both colleges typically demonstrate moderate proficiency in listening and note-taking, generally thorough but lacking a specific plan (Jeary et al., 2006).

In addition, the analysis of the variance of colleges regarding reading/comprehension strategies is significant. It shows that students with Education, Arts, and Sciences reading/comprehension strategies differ from those with Computing Studies degrees. However, the mean scores for Education, Arts and Sciences, and Computing Studies degrees describe the same average development levels in their reading/comprehension strategies. This means that both students in the said colleges have an average developing strategy for comprehension and sometimes use advanced techniques rather than consistently (Jeary et al., 2006).

Likewise, the statistical significance of the ANOVA of colleges between Education Arts and Sciences degrees and Computing Studies degrees students showed significant differences in test-taking strategies. Education, Arts and Sciences degree college students have a greater mean than Computing Studies degree college students. However, it is described as having the same average development in their test-taking strategies. This shows that the students at those colleges have average proficiency in test strategies. Jeary et al. (2006) described these college students' modest ability to reject unfamiliar responses, recognize significant features in item stems, and efficiently manage test time.

In addition, the time management of Education Arts and Sciences degrees and Computing Studies degrees colleges showed statistical significance in the analysis of variance. College students with Education, Arts, and Sciences degrees have better time management than those with Computing Studies degrees. As per Jeary et al. (2006), the results revealed the average development levels in their time management. This means these college students have average skills in managing and allocating time, and can be planned but are inconsistent.

Lastly, the organizational techniques among Education Arts and Sciences degrees and Computing Studies degrees college students show statistical significance in analyzing which Education Arts and Sciences degrees have better organizational techniques than Computing Studies degrees college students. However, the findings describe the organizational techniques of Education Arts and Sciences degrees and Computing Studies degrees colleges to have the same average development, which means they have moderate organizational and management in handling study materials, notes, and study space (Jeary et al., 2006).

Conclusion

In conclusion, a comprehensive investigation of various study techniques among college students provides extensive information about students' academic practices and



competency levels. Students often demonstrate common-to-moderate levels of growth in various domains, including planning, note-taking, reading comprehension, writing and research, test-taking, time management, and organizational techniques.

While some students excel in tasks such as taking notes and listening, others must consistently use effective tactics, especially in reading comprehension and time management. However, gender differences emerged, with female students demonstrating better-developed study habits and strategies than male students, particularly in note-taking, listening abilities, and time management. These findings are consistent with earlier research highlighting the role of study strategies in academic success.

Furthermore, differences between college years and colleges play a role, as test-taking ability and organizing approaches vary across degree tracks and academic years. Despite these variances, there is a common trend of average proficiency across college students in various study abilities, indicating a space for development and focused interventions to increase academic performance and success. Overall, this study emphasizes the necessity of developing efficient study habits and supporting students to optimize their learning capacity and educational accomplishment.

Tailored study skills courses are proposed based on the conclusions of the analysis of college students' study skills. These workshops should focus on areas where students demonstrate average-to-moderate proficiency, such as reading comprehension and time management. Workshops should include practical ideas and improvement tactics to help students improve their study habits. In addition, recognizing and addressing gender differences in study strategies is critical. Gender-sensitive support services, such as specialized workshops or mentoring programs, should be provided to improve male students' study skills. These programs should concentrate on areas where male students are more proficient than female students, such as note-taking, listening skills, and time management. It is critical to incorporate study-skill development into the college curriculum to assist students in improving their study abilities. Faculty members should be encouraged to include study skills education, allowing students to practice and use these skills in real-world situations. Setting up peer mentorship programmes can also be extremely valuable. Experienced students can mentor and support their peers in creating successful study habits by offering advice, sharing study tactics, and encouraging them to achieve academic success. Regular assessment and feedback are essential components of effective study skill development. Implementing regular assessments to measure students' progress and providing timely feedback for improvement would allow students to reflect on their study habits and create growth goals.

Furthermore, using digital tools and resources is another successful technique for helping students improve their study skills. Providing students access to online platforms, applications, and digital resources, including tutorials, practice activities, and self-assessment tools, will enable them to improve their study habits independently. Likewise, fostering an academic support culture is critical for promoting a friendly environment where students feel comfortable seeking assistance from the faculty, staff, and peers.



Collaboration and peer learning opportunities should be encouraged to help students share knowledge and develop their skills. Finally, providing faculty development programs centered on effective teaching practices to promote study-skill development is critical. Faculty members must be given materials and training to help incorporate study skills education into their teaching techniques and provide continuing support for implementation.

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