



The Impact of Socioeconomic Status on Learner Autonomy Among Cambodian High School Students

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ABSTRACT

The study explores the impact of socioeconomic status on learner autonomy among high school students in Cambodia, focusing on how self-regulation, motivation, and access to resources vary across different socioeconomic groups. Using a quantitative cross-sectional design, data were collected from 412 students across five provinces, employing structured questionnaires and statistical analysis with SPSS software. The findings highlight that socioeconomic status significantly influences various dimensions of learner autonomy. Students from lower and medium socioeconomic backgrounds exhibited higher intrinsic motivation, greater engagement in selecting study topics, and proactive behaviors in problem-solving and goal-setting compared to their peers from higher socioeconomic backgrounds. However, no significant differences were found in the ability to set learning goals or monitor progress across groups. The study also examines disparities in perceptions of teaching methods, resource adequacy, and technology access, revealing areas that may benefit from targeted educational interventions to promote equitable learning opportunities. The results underscore the need for tailored strategies to support autonomous learning, ensuring that students from diverse socioeconomic contexts can thrive academically and develop essential skills for the modern labor market.

Keywords: Socioeconomic Status, Learner Autonomy, Resource Access, Influence Factors, Self-Regulation, and Motivation

1. Introduction

Over the past decade, Cambodia has experienced significant economic growth and a marked reduction in poverty. Household consumption and disposable incomes have risen substantially, with average monthly incomes increasing from \$117.70 in 2012 to \$263.20 in 2019. This economic progress has been accompanied by a shift in the labor force, moving from family-based work to wage and salaried employment, as well as a sectoral transition from agriculture to services and industry. While the COVID-19 pandemic temporarily disrupted the labor market, increasing unemployment to 4.3% in 2020 and disproportionately affecting women, the economy rebounded in 2021 and 2022 (Bissinger, 2023). However, poverty levels have decreased by 40.43% over the past decade, reducing the number of people living below the poverty line to 2.8 million, including 2.2 million in rural areas and 0.6 million in urban regions. This reduction reflects the positive impact of consistent economic growth, with Cambodia maintaining an average growth rate of 7.7% over the last two decades (Eng, R., & Lim, S., 2024).

1.1 Problem Statement

This socio-economic transformation prompts an important question regarding the impact of socioeconomic status on education outcomes, specifically in the context of learner autonomy. As educational attainment becomes increasingly crucial for securing employment in the modern economy, understanding how socioeconomic status influences student engagement, motivation, and independence in learning is essential. The ability to navigate the demands of the labor market is increasingly dependent on skills such as problem-solving, critical thinking, and independent learning, all of which are shaped by students' educational experiences.

While urban students may benefit from more resources, better access to technology, and more exposure to diverse educational methods, their rural counterparts often struggle with limited resources, fewer educational opportunities, and a lack of infrastructure. These disparities raise critical concerns about the role of socioeconomic status in shaping educational outcomes, particularly with regard to self-directed learning and learner autonomy. In rural areas, where educational resources are scarce, students may find it more challenging to develop the skills needed to excel in a competitive global economy.

Given the growing importance of skills like problem-solving, critical thinking, and independent learning in the labor market, it is essential to explore how students from different socio-economic backgrounds approach these aspects of education. Understanding how they perceive their ability to set goals, monitor progress, and take charge of their own learning can offer insights into the broader impact of socioeconomic status on educational

outcomes. By addressing these challenges, policymakers and educators can work toward bridging the gap in educational opportunities and outcomes across different socioeconomic groups, ensuring that all students are equipped to thrive in an increasingly complex and competitive world.

1.2 Objectives of the Study

This study aims to investigate the influence of socioeconomic status on various aspects of learner autonomy, focusing on self-regulation, motivation, and access to resources. The research will explore how students' socioeconomic backgrounds affect their ability to set learning goals, monitor their progress, and plan their educational outcomes. By examining these factors, the study seeks to understand how students from different socioeconomic groups approach self-directed learning, including their capacity to take ownership of their learning process and assess their progress over time.

In addition to self-regulation, the study will examine how socioeconomic factors impact students' motivation to engage in independent learning. This includes exploring students' self-motivation to learn without direct supervision and their willingness to seek additional resources to enhance their educational experience. Understanding the role of motivation in fostering learner autonomy is essential, as it can significantly influence students' ability to independently navigate their academic journeys and adapt to the demands of the labor market. By exploring these motivational aspects, the study will uncover potential barriers or advantages related to socioeconomic status that affect students' learning behaviors.

Furthermore, the study will assess how students perceive the resources and support systems that contribute to their learner autonomy. This includes evaluating the adequacy of school resources, access to technology, and the role of parental involvement and community cultural attitudes in shaping students' learning experiences. By addressing these critical areas, the research aims to highlight how socioeconomic disparities in resources and support systems affect students' educational outcomes. The findings will provide valuable insights into how these disparities shape educational experiences and offer recommendations for bridging the gap in educational opportunities, ensuring all students are equipped to succeed in an increasingly complex and competitive world.

2. Literature Review

2.1 Theoretical Framework

Social Stratification Theory examines the hierarchical arrangement of individuals in society based on various factors such as wealth, income, education, occupation, and power. It posits that these divisions lead to inequality in opportunities and access to resources, which in turn affects individuals' life chances and social mobility. According to Weber (1978), social stratification is not solely based on economic factors but also includes status and power, which determine an individual's position within society. This broader view of stratification highlights how social prestige and influence can be as important as economic wealth in shaping individuals' lives. Cited in Marx (1867) stratification is primarily a result of economic relations, particularly the division between the bourgeoisie (owners of the means of production) and the proletariat (working class), which creates a system of exploitation and class conflict (Nesbit, 2010). This framework views inequality as an inherent feature of capitalist societies, where the ruling class maintains power by controlling resources. Additionally, functionalist sociologists like Davis and Moore (1945) suggest that stratification serves a purpose in society by ensuring that the most important roles are filled by the most qualified individuals, thereby promoting efficiency and stability.

Cultural Capital Theory, developed by sociologist Pierre Bourdieu, explores how cultural knowledge, behaviors, and practices contribute to social stratification and inequality. Bourdieu (1986) argues that individuals and groups possess varying levels of cultural capital, which includes forms of cultural knowledge, education, language, and tastes that are valued by society. These forms of capital can be used to gain access to social, economic, and educational opportunities, thereby influencing an individual's social position. Moreover, cultural capital plays a significant role in the reproduction of social class, as it is often passed down through generations. As Lareau (2003) demonstrates in her study of parenting styles, middle-class families tend to foster cultural practices that align with the expectations of schools and other institutions, giving their children an advantage over their working-class peers. Moreover, schools themselves serve as key sites where cultural capital is both recognized and rewarded, reinforcing social hierarchies (Bourdieu, P., & Passeron, J. C., 1977).

2.2 Review of the Impact of Socio-Economic Factors on Education in Cambodia

Socio-economic factors play a significant role in shaping education outcomes in Cambodia, where the country has made notable progress, particularly in primary education. With enrollment rates consistently exceeding 95% (UNESCO, 2018), Cambodia's educational journey reflects both advancement and resilience, characterized by increased enrollment, the establishment of new schools, and enhanced access to learning opportunities (World Bank Group, 2024). These improvements underscore the country's ongoing efforts to overcome socio-economic challenges and broaden educational access. However, while the government has made strides in improving education quality, addressing these socio-economic challenges will require structural changes and long-term investment in the education sector.

Poverty-related challenges have a significant impact on learning opportunities, particularly in rural areas of Cambodia. More than 18% of children aged 5 to 14 are engaged in child labor, and 79.2% lack access to education. These issues are further exacerbated by natural disasters, such as floods and droughts, with the 2016 drought being the worst since 1979, hindering schools' ability to implement government-designed educational programs. Additionally, poverty, malnutrition, health problems, and disabilities are more common among school-age children, especially in remote villages. These socio-economic factors contribute to one of the highest school dropout rates in Southeast Asia (Helpcode, 2024).

Addressing these challenges requires improved leadership, better teaching quality, and a supportive school environment that encourages both parents and children to value and prioritize education. To this end, UNICEF works with the Cambodian government and other partners to ensure equitable access, focusing on providing scholarships, enhancing early childhood education, improving school facilities, and ensuring the availability of trained teachers to meet the needs of diverse students. Additionally, reforms to the national curriculum, including the integration of life skills and health education, are essential for preparing students to thrive in the future. By strengthening community involvement, promoting inclusive education, and improving educational quality, Cambodia can create opportunities for all children to achieve their full potential (UNICEF, 2018).

3. Methodology

3.1 Research Design

The research adopted a quantitative design with a cross-sectional approach, concentrating on the interaction between socioeconomic status and students' attitudes towards learner autonomy, and the differences within the influencing factors, and the outcome. The study population included high school students from five Cambodian provinces: Banteay Meanchey, Battambang, Pailin, Preah Vihear, and Takeo. Data were collected at one point in time to capture a clear picture of the current conditions. A structured questionnaire was the main tool for data collection, ensuring consistent and precise measurement of the relationships between learner autonomy and its influencing factors across the varied population.

The sampling method for this study involved selecting a representative sample from high schools in five provinces across Cambodia. Fourteen schools were included in the sample, representing a mix of public and private institutions, with 12 public and 2 private schools. A total of 412 students participated, consisting of 271 girls and 141 boys. This sampling approach aimed to capture a diverse range of students from various educational settings and gender groups, providing a comprehensive perspective on learner autonomy and its influencing factors across different high school environments.

Data were gathered through a self-administered Google Form distributed via Messenger and Telegram, making it convenient for participants to access and complete. After data collection, SPSS software was used for statistical analysis, allowing for a thorough examination of the data. A regression model was applied to investigate the relationships between learner autonomy and its influencing factors, enabling an in-depth analysis of how different independent variables affected various aspects of learner autonomy, offering valuable insights into the dynamics at play within the study's framework.

3.2 Research Variables

The independent variables represented factors presumed to influence or explain learner autonomy among high school students. These included demographic information, such as socioeconomic status (low, medium, and high), which classified participants into socioeconomic groups. This factor was expected to influence students' access to learning resources, parental support, and academic opportunities. The components of learner autonomy were also considered as independent variables, including self-regulation, which measured students' ability to set and monitor their own learning goals, and self-motivation, which captured students' intrinsic motivation to learn without direct supervision and their initiative in seeking additional resources. Furthermore, the variable of decision-making assessed the extent to which students were involved in selecting their study topics and solving learning problems. Lastly, goal-setting and planning focused on students' ability to set specific learning goals, plan their achievement, and adjust their learning processes over time.

The study also examined influencing factors that potentially impacted learner autonomy. These included perceptions of teaching methods promoting independent learning, the adequacy of school resources (such as access to books, online materials, and technology for self-directed learning), and the level of parental involvement, which measured the support and encouragement students received for autonomous learning. Additionally, cultural attitudes were considered, assessing whether community norms supported independent learning or placed an emphasis on rote memorization in education.

The dependent variables were the outcomes affected by the independent variables, specifically related to the effectiveness of learner autonomy. These outcomes included academic performance, which measured the perceived effect of autonomous learning on academic success, particularly in terms of performance on assignments and exams. In addition, personal development variables were analyzed to assess how learner autonomy contributed to students' confidence and problem-solving abilities, reflecting personal growth resulting from independent learning.

All variables in the study were measured using a 10-point Likert scale, ranging from "Strongly Disagree" to "Completely Agree." This allowed for the quantitative analysis of students' attitudes and behaviors related to learner autonomy. The relationships between these variables were tested to determine how socioeconomic status interacts with other variables both independent and dependent.

3.3 Data Analysis

The study employed SPSS software for data analysis, implementing a range of statistical methods to explore the relationships between variables. A contingency table was created to compare observed values with expected values, which served as a foundational tool for further analysis. This approach allowed for a clear visualization of the distribution of responses across different categories, setting the stage for a more in-depth examination of the data. The use of Chi-square tests enabled the researchers to assess the associations between categorical variables, providing insights into the significance of these relationships and revealing patterns in the data.

In addition to the Chi-square tests, the analysis incorporated the Likelihood Ratio test, which offered an alternative measure for assessing associations and determining the strength of the relationships between variables. The Linear-by-linear association test was also utilized to examine trends and interactions within the data, particularly in relation to ordinal variables. By employing these statistical techniques, the study provided a comprehensive analysis of the interaction between socioeconomic status and learner autonomy, contributing valuable insights into the dynamics at play within the educational settings examined.

4. Results

4.1 Self-Regulation

4.1.1 I can set my own learning goal

Based on the crosstabulation table extracted from SPSS, the relationship between socioeconomic status (categorized as Low, Medium, and High) and students' responses to the statement "I can set my own learning goals," measured on a 10-point Likert scale ranging from "Strongly Disagree" to "Completely Agree," is presented. The table shows the actual count of responses for each combination of socioeconomic status and agreement level, as well as the expected counts based on the overall distribution of responses.

For students with low socioeconomic status, a total of 55 responses are recorded. The most frequent response falls under "Agree" (15 responses), followed by "Neutral" (13 responses) and "Strongly Agree" (7 responses). The expected counts indicate that fewer students than expected strongly disagreed or disagreed, and more students than expected agreed or completely agreed with the statement. In the medium socioeconomic status group, with 329 responses, the most common response was also "Agree" (151 responses), followed by "Neutral" (68 responses) and "Somewhat Agree" (41 responses). The distribution is closely aligned with the expected counts, with only minor deviations across the categories. For the high socioeconomic status group, comprising 28 responses, the highest number of responses falls under "Agree" (10 responses) and "Strongly Agree" (4 responses), with the remaining responses spread across the scale. The expected counts for this group are generally consistent with the actual counts, reflecting fewer disagreements and stronger agreement overall.

In total, across all socioeconomic statuses, 412 responses were collected, with the largest portion of students indicating "Agree" (176 responses), followed by "Neutral" (87 responses) and "Somewhat Agree" (52 responses). The expected counts closely match the observed counts, demonstrating a general trend toward agreement with the statement "I can set my own learning goals" across all socioeconomic groups.

Table 1: Crosstab – "I can set my own learning goals."

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	2	1	0	0	13	1	8	15	7	8	55
	Expected Count	0.5	0.4	0.8	0.9	11.6	2.4	6.9	23.5	4.1	3.7	55.0
Medium	Count	2	2	5	7	68	15	41	151	20	18	329
	Expected Count	3.2	2.4	4.8	5.6	69.5	14.4	41.5	140.5	24.8	22.4	329.0
High	Count	0	0	1	0	6	2	3	10	4	2	28
	Expected Count	0.3	0.2	0.4	0.5	5.9	1.2	3.5	12.0	2.1	1.9	28.0
Total	Count	4	3	6	7	87	18	52	176	31	28	412
	Expected Count	4.0	3.0	6.0	7.0	87.0	18.0	52.0	176.0	31.0	28.0	412.0

The results of the Chi-Square Tests examine the relationship between socioeconomic status and students' responses to the statement, "I can set my own learning goals." The Pearson Chi-Square value is 25.611 with 18 degrees of freedom (df), and the asymptotic significance (2-sided) value is 0.109. Since this p-value is greater than the conventional threshold of 0.05, it suggests that there is no statistically significant association between socioeconomic status and the ability to set one's own learning goals in this dataset.

The Likelihood Ratio test produces a similar result, with a value of 24.968, also with 18 degrees of freedom, and an asymptotic significance of 0.126, reinforcing the lack of significant association. The Linear-by-Linear Association test yields a value of 0.000 with a p-value of .999, indicating no linear relationship between socioeconomic status and the responses.

Additionally, it is noted that 18 cells (60.0%) in the crosstabulation have an expected count of less than 5, which may affect the reliability of the chi-square test results. The minimum expected count is 0.20, highlighting that some categories have relatively low frequencies, which could potentially limit the robustness of the findings. However, based on the current test statistics, no significant relationship is observed.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	25.611 ^a	18	0.109
Likelihood Ratio	24.968	18	0.126
Linear-by-Linear Association	0.000	1	0.999
N of Valid Cases	412		

a. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.20.

4.1.2 I can monitor my progress toward my learning goal

For students with low socioeconomic status, there are 55 total responses. The most frequent response is "Agree" (28 responses), followed by "Neutral" (7 responses) and "Somewhat Agree" (6 responses). The observed counts are generally close to the expected counts, with a few slight deviations, particularly in the "Completely Agree" category, where the observed count of 6 is notably higher than the expected count of 3.3. In the medium socioeconomic status group, comprising 329 responses, the highest number of responses is also found in the "Agree" category (140 responses), followed by "Neutral" (77 responses) and "Somewhat Agree" (38 responses). The distribution is consistent with the expected counts, with small variations in categories such as "Slightly Agree" and "Completely Agree." For the high socioeconomic status group, which includes 28 responses, the most common response is "Agree" (14 responses), followed by "Somewhat Agree" and "Neutral" (both with 5 responses each). The actual counts align well with the expected counts, though the "Agree" category slightly exceeds the expectation, while the remaining categories show minimal differences.

Overall, across all socioeconomic groups, there are 412 responses in total. The majority of students selected "Agree" (182 responses), followed by "Neutral" (89 responses) and "Somewhat Agree" (49 responses). The expected counts match the observed counts closely, indicating a general trend toward agreement that students can monitor their progress toward their learning goals across all socioeconomic statuses.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	2	0	0	1	7	3	6	28	2	6	55
	Expected Count	0.4	0.1	0.5	1.2	11.9	2.9	6.5	24.3	3.7	3.3	55.0
Medium	Count	1	1	4	8	77	18	38	140	24	18	329
	Expected Count	2.4	0.8	3.2	7.2	71.1	17.6	39.1	145.3	22.4	20.0	329.0
High	Count	0	0	0	0	5	1	5	14	2	1	28
	Expected Count	0.2	0.1	0.3	0.6	6.0	1.5	3.3	12.4	1.9	1.7	28.0
Total	Count	3	1	4	9	89	22	49	182	28	25	412
	Expected Count	3.0	1.0	4.0	9.0	89.0	22.0	49.0	182.0	28.0	25.0	412.0

The Chi-Square Tests assess the relationship between socioeconomic status and students' responses to the statement, "I can monitor my progress toward my learning goals." The Pearson Chi-Square value is 17.691 with 18 degrees of freedom (df) and an asymptotic significance (2-sided) value of 0.476. Since this p-value is much greater than the standard threshold of 0.05, it indicates that there is no statistically significant association between socioeconomic status and students' ability to monitor their learning progress.

The Likelihood Ratio test provides a similar result, with a value of 16.605 and a p-value of 0.550, further confirming the lack of significant association. The Linear-by-Linear Association test, which evaluates whether there is a linear relationship between the two variables, yields a value of 0.105 with a p-value of 0.746, indicating that no linear trend exists between socioeconomic status and the responses. Moreover, it is noted that 18 cells (60.0%) in the crosstabulation have expected counts of less than 5, and the minimum expected count is 0.07, suggesting some categories have low

frequencies, which could limit the robustness of the Chi-Square test results. However, based on the test outcomes, there is no evidence of a significant relationship between the two variables.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.691 ^b	18	0.476
Likelihood Ratio	16.605	18	0.550
Linear-by-Linear Association	0.105	1	0.746
N of Valid Cases	412		
b. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.07.			

4.2 Self-Motivation

4.2.1 I feel motivated to learn even without direct supervision

For students categorized under low socioeconomic status, the data reveal a total of 55 responses, with notable counts in the higher agreement levels. Specifically, 20 students indicated "Agree," and 16 expressed "Completely Agree." In contrast, the expected counts suggest a lower level of motivation, particularly in the categories of "Strongly Disagree" and "Disagree," with expected counts of 0.5 and 0.1, respectively. Students from the medium socioeconomic group exhibited a total of 329 responses. Here, the majority of students (144) responded with "Agree," followed by 61 who chose "Completely Agree." The expected counts reflect a similar trend, showing higher anticipated responses in the "Agree" category, aligning with the actual data. Conversely, the high socioeconomic status group recorded a total of 28 responses. This group displayed the least motivation, with only 16 students responding "Agree" and 1 indicating "Completely Agree." The expected counts were lower across the board, particularly in the agreement levels, indicating a significant discrepancy between the actual and expected responses for this socioeconomic group. Overall, the crosstabulation demonstrates varied levels of motivation among students based on their socioeconomic status, with students from low and medium statuses exhibiting higher motivation compared to their peers from high socioeconomic backgrounds.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	2	0	1	0	4	1	5	20	6	16	55
	Expected Count	0.5	0.1	0.3	0.5	5.5	1.2	4.8	24.0	7.6	10.4	55.0
Medium	Count	2	0	1	4	35	7	29	144	46	61	329
	Expected Count	3.2	0.8	1.6	3.2	32.7	7.2	28.7	143.7	45.5	62.3	329.0
High	Count	0	1	0	0	2	1	2	16	5	1	28
	Expected Count	0.3	0.1	0.1	0.3	2.8	0.6	2.4	12.2	3.9	5.3	28.0
Total	Count	4	1	2	4	41	9	36	180	57	78	412
	Expected Count	4.0	1.0	2.0	4.0	41.0	9.0	36.0	180.0	57.0	78.0	412.0

The results of the Chi-Square tests indicate a statistically significant relationship between the variables examined. The Pearson Chi-Square value is 32.013 with 18 degrees of freedom, yielding an asymptotic significance (p-value) of 0.022. This suggests that there is a significant association between socioeconomic status and students' motivation to learn without direct supervision, as the p-value is below the conventional threshold of 0.05. In contrast, the likelihood ratio test produced a value of 23.783 with the same degrees of freedom, resulting in a p-value of 0.162, which does not indicate significance. Additionally, the linear-by-linear association test showed a value of 0.490 with a p-value of 0.484, further suggesting that there is no significant linear relationship between the variables when considering their ranks. It is important to note that 18 cells, or 60.0% of the cells in the Chi-Square table, have an expected count of less than 5, with the minimum expected count being 0.07, which may affect the reliability of the Chi-Square results. Overall, while the Pearson Chi-Square indicates significance, the other tests suggest a more complex relationship that may require further exploration.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.013 ^c	18	0.022
Likelihood Ratio	23.783	18	0.162
Linear-by-Linear Association	0.490	1	0.484
N of Valid Cases	412		
c. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.07.			

4.2.2 I actively seek additional resources to enhance my learning.

For students categorized under low socioeconomic status, the data reveal a total of 55 responses, with notable counts in the higher agreement levels. Specifically, 21 students indicated "Agree," and 11 expressed "Completely Agree." In contrast, the expected counts suggest a lower level of motivation, particularly in the categories of "Strongly Disagree" and "Disagree," with expected counts of 0.4 and 0.1, respectively. Students from the medium socioeconomic group exhibited a total of 329 responses. Here, the majority of students (154) responded with "Agree," followed by 39 who chose "Completely Agree." The expected counts for this group align closely with the actual responses, showing a consistent pattern of motivation among these students. Conversely, the high socioeconomic status group recorded a total of 28 responses, indicating less engagement in seeking additional resources. This group had only 14 students who responded "Agree" and 3 who indicated "Completely Agree." The expected counts for this group were lower across the response categories, suggesting a significant discrepancy between actual engagement and expected participation. Overall, the crosstabulation highlights varied levels of motivation among students based on their socioeconomic status, with students from low and medium statuses exhibiting higher motivation to seek additional resources compared to their high socioeconomic peers.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
		Low	Count	2	0	1	0	8	0	7	21	5
	Expected Count	0.4	0.1	0.3	0.9	8.0	3.2	5.7	25.2	6.3	4.8	55.0
Medium	Count	1	1	1	7	47	22	35	154	39	22	329
	Expected Count	2.4	0.8	1.6	5.6	47.9	19.2	34.3	150.9	37.5	28.7	329.0
High	Count	0	0	0	0	5	2	1	14	3	3	28
	Expected Count	0.2	0.1	0.1	0.5	4.1	1.6	2.9	12.8	3.2	2.4	28.0
Total	Count	3	1	2	7	60	24	43	189	47	36	412
	Expected Count	3.0	1.0	2.0	7.0	60.0	24.0	43.0	189.0	47.0	36.0	412.0

The Chi-Square tests provide insights into the relationship between the variables analyzed. The Pearson Chi-Square value is 28.178 with 18 degrees of freedom, resulting in an asymptotic significance (p-value) of 0.059. This p-value is close to the conventional threshold of 0.05, suggesting a marginally significant association between the variables examined. The likelihood ratio test yielded a value of 27.992, also with 18 degrees of freedom, resulting in a p-value of 0.062, reinforcing the notion of a potential association but still not reaching conventional significance. Additionally, the linear-by-linear association test produced a value of 0.023 with a p-value of 0.880, indicating no significant linear relationship between the variables. It is important to note that 18 cells, or 60.0% of the cells in the Chi-Square table, have an expected count of less than 5, with the minimum expected count being 0.07, which may impact the reliability of the Chi-Square results. Overall, while the Pearson Chi-Square and likelihood ratio tests suggest a possible association, the lack of clear significance in the linear association and the low expected counts indicate that further investigation may be necessary.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.178 ^d	18	0.059
Likelihood Ratio	27.992	18	0.062
Linear-by-Linear Association	0.023	1	0.880
N of Valid Cases	412		

d. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.07.

4.3 Decision-Making

4.3.1 I am involved in choosing the topics I study in my courses

For students categorized under low socioeconomic status, the data reveal a total of 55 responses, with notable counts in the higher agreement levels. Specifically, 18 students indicated “Agree,” and 8 expressed “Completely Agree.” However, the expected counts suggest that fewer students would typically be anticipated to agree, particularly in the lower categories, where the expected counts are significantly lower. In the medium socioeconomic group, which produced a total of 329 responses, the majority of students (131) responded with “Agree,” followed by 21 who chose “Completely Agree.” The expected counts for this group align closely with the actual responses, indicating a consistent pattern of involvement in choosing study topics among these students. Conversely, the high socioeconomic status group recorded a total of 28 responses, demonstrating less engagement in topic selection. This group had only 11 students who responded “Agree” and 1 who indicated “Completely Agree.” The expected counts for this group were also lower across the response categories, suggesting a significant discrepancy between actual involvement and expected participation. In summary, the crosstabulation highlights varied levels of involvement in selecting study topics among students based on their socioeconomic status, with students from low and medium statuses showing greater engagement compared to their high socioeconomic peers.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
		Low	Count	2	0	0	2	10	6	5	18	4
	Expected Count	0.3	0.9	0.7	1.1	15.8	4.0	4.8	21.4	3.6	2.5	55.0
Medium	Count	0	7	5	5	96	24	30	131	21	10	329
	Expected Count	1.6	5.6	4.0	6.4	94.2	24.0	28.7	127.8	21.6	15.2	329.0
High	Count	0	0	0	1	12	0	1	11	2	1	28
	Expected Count	0.1	0.5	0.3	0.5	8.0	2.0	2.4	10.9	1.8	1.3	28.0
Total	Count	2	7	5	8	118	30	36	160	27	19	412
	Expected Count	2.0	7.0	5.0	8.0	118.0	30.0	36.0	160.0	27.0	19.0	412.0

The Chi-Square tests provide a comprehensive analysis of the relationship between the examined variables. The Pearson Chi-Square value is 39.850, with 18 degrees of freedom, resulting in an asymptotic significance (p-value) of 0.002. This p-value indicates a statistically significant association between the variables, as it falls below the conventional threshold of 0.05. Similarly, the likelihood ratio test yielded a value of 35.239, also with 18 degrees of freedom, resulting in a p-value of 0.009, which further supports the existence of a significant relationship. However, the linear-by-linear association test produced a value of 1.630, with a p-value of 0.202, indicating no significant linear relationship between the variables when considered in a ranked manner. It is noteworthy that 18 cells, or 60.0% of the cells in the Chi-Square table, have an expected count of less than 5, with the minimum expected count being 0.14, which may affect the reliability of the Chi-Square results. Overall, the analysis reveals a significant association between the variables, though the low expected counts suggest caution in interpreting the findings fully.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	39.850 ^e	18	0.002
Likelihood Ratio	35.239	18	0.009
Linear-by-Linear Association	1.630	1	0.202
N of Valid Cases	412		

e. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.14.

4.3.2 I decide how to approach solving problems or assignments

For students categorized under low socioeconomic status, the data reveal a total of 55 responses, with notable counts in the agreement levels. Specifically, 19 students indicated “Agree,” and 6 expressed “Completely Agree.” However, the expected counts suggest a lower level of independence in decision-making, particularly in the categories of “Strongly Disagree” and “Disagree,” where the expected counts are relatively low. In the medium socioeconomic group, which produced a total of 329 responses, the majority of students (133) responded with “Agree,” followed by 29 who chose “Completely Agree.” The expected counts for this group closely align with the actual responses, indicating a consistent pattern of confidence in approaching problem-solving among these students. Conversely, the high socioeconomic status group recorded a total of 28 responses, indicating less independence in decision-making. This group had only 15 students who responded “Agree” and 1 who indicated “Completely Agree.” The expected counts for this group were lower across the response categories, suggesting a significant discrepancy between actual decision-making ability and expected participation. In short, the crosstabulation highlights varied levels of independence in problem-solving approaches among students based on their socioeconomic status, with students from low and medium statuses demonstrating greater confidence in deciding how to tackle assignments compared to their high socioeconomic peers.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	2	0	0	4	8	6	4	19	6	6	55
	Expected Count	0.7	0.4	0.4	1.2	9.2	4.9	7.9	22.3	4.9	3.1	55.0
Medium	Count	3	3	1	5	57	29	53	133	29	16	329
	Expected Count	4.0	2.4	2.4	7.2	55.1	29.5	47.1	133.4	29.5	18.4	329.0
High	Count	0	0	2	0	4	2	2	15	2	1	28
	Expected Count	0.3	0.2	0.2	0.6	4.7	2.5	4.0	11.3	2.5	1.6	28.0
Total	Count	5	3	3	9	69	37	59	167	37	23	412
	Expected Count	5.0	3.0	3.0	9.0	69.0	37.0	59.0	167.0	37.0	23.0	412.0

The Chi-Square tests conducted on the relationship between the examined variables reveal significant findings. The Pearson Chi-Square value is 38.463, with 18 degrees of freedom, resulting in an asymptotic significance (p-value) of 0.003. This p-value indicates a statistically significant association between the variables, as it is well below the conventional threshold of .05. In contrast, the likelihood ratio test yielded a value of 27.002 with 18 degrees of freedom and a p-value of 0.079, suggesting that while there is some indication of a relationship, it does not reach conventional significance. Additionally, the linear-by-linear association test produced a value of 0.079 and a p-value of 0.779, indicating no significant linear relationship between the variables when considered in a ranked manner. It is important to note that 19 cells, or 63.3% of the cells in the Chi-Square table, have an expected count of less than 5, with the minimum expected count being 0.20, which may impact the reliability of the Chi-Square results. Overall, while the Pearson Chi-Square test suggests a significant association, the low expected counts in many cells highlight the need for cautious interpretation of these findings.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	38.463 ^f	18	0.003
Likelihood Ratio	27.002	18	0.079
Linear-by-Linear Association	0.079	1	0.779
N of Valid Cases	412		

f. 19 cells (63.3%) have expected count less than 5. The minimum expected count is 0.20.

4.4 Goal-Setting and Planning

4.4.1 I set specific goals for my learning and plan how to achieve them

Among students from low socioeconomic status, 55 responses were recorded, with higher counts in the “Agree” and “Completely Agree” categories, where 19 students indicated “Agree” and 12 selected “Strongly Agree.” The expected counts for these categories were slightly lower, with 23.4 and 8.4, respectively, indicating a higher-than-expected number of responses in these agreement levels. For medium socioeconomic status students, there were a total of 329 responses. The majority of these students also displayed a positive attitude toward setting goals, with 145 indicating “Agree” and 42 selecting “Strongly Agree.” The expected counts closely align with the actual responses, suggesting that students from this group are more likely to set specific learning goals. On the other hand, students from high socioeconomic status recorded 28 responses, with 11 indicating “Agree” and 9 selecting “Strongly Agree,” slightly higher than the expected counts of 11.9 and 4.3, respectively. In conclusion, the data shows that students across all socioeconomic statuses are involved in goal-setting, with medium and low socioeconomic groups having slightly more students reporting positive goal-setting behaviors than anticipated.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	2	0	1	0	5	3	5	19	12	8	55
	Expected Count	0.3	0.1	0.5	0.8	6.7	2.7	6.9	23.4	8.4	5.2	55.0
Medium	Count	0	1	3	6	42	16	45	145	42	29	329
	Expected Count	1.6	0.8	3.2	4.8	39.9	16.0	41.5	139.7	50.3	31.1	329.0
High	Count	0	0	0	0	3	1	2	11	9	2	28
	Expected Count	0.1	0.1	0.3	0.4	3.4	1.4	3.5	11.9	4.3	2.7	28.0
Total	Count	2	1	4	6	50	20	52	175	63	39	412
	Expected Count	2.0	1.0	4.0	6.0	50.0	20.0	52.0	175.0	63.0	39.0	412.0

The Chi-Square test results indicate a Pearson Chi-Square value of 28.638 with 18 degrees of freedom, and an asymptotic significance (2-sided) of 0.053. This value approaches the commonly used significance threshold of 0.05, suggesting a marginal association between the variables. The Likelihood Ratio test shows a value of 24.005 with 18 degrees of freedom and an asymptotic significance of 0.155, indicating no significant association. The Linear-by-Linear Association test has a value of 0.182 with a significance level of 0.670, suggesting no linear relationship between the variables. There are 412 valid cases in this analysis, and 18 cells (60.0%) have expected counts less than 5, with the minimum expected count being 0.07. This indicates that the distribution of responses may be somewhat uneven across categories, potentially affecting the chi-square test's power.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.638 ^a	18	0.053
Likelihood Ratio	24.005	18	0.155
Linear-by-Linear Association	0.182	1	0.670
N of Valid Cases	412		

g. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.07.

4.4.2 I regularly review and adjust my learning plans based on my progress

Among students with low socioeconomic status, there were 55 responses. The largest number of students, 20, indicated “Agree,” followed by 11 students who chose “Neutral,” and 7 who selected “Strongly Agree” and “Completely Agree” each. The expected counts for these responses align relatively closely with the actual counts, though slightly more students than expected agreed with the statement. In the medium socioeconomic group, there were 329 responses. The majority of students, 154, indicated “Agree,” while 52 chose “Neutral,” and 38 selected “Somewhat Agree.” The expected counts for this group also closely match the actual data, reflecting a strong alignment in agreement with the statement. For the high socioeconomic status group, with 28 responses, 15 students agreed with the statement, 5 selected “Neutral,” and 4 chose “Strongly Agree.” The expected counts suggest that the responses were close to what was anticipated, with a higher concentration of agreement levels. Overall, the data indicate that across all socioeconomic statuses, students generally agree with the statement about reviewing and adjusting their learning plans. The medium socioeconomic status group shows the highest level of agreement, while the low and high socioeconomic groups have smaller but still significant numbers of students indicating regular review of their learning plans.

Socioeconomic Status		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	2	0	1	11	2	5	20	7	7	55
	Expected Count	0.5	0.3	0.8	9.1	4.0	5.7	25.2	5.3	4.0	55.0
Medium	Count	2	2	5	52	25	38	154	29	22	329
	Expected Count	3.2	1.6	4.8	54.3	24.0	34.3	150.9	31.9	24.0	329.0
High	Count	0	0	0	5	3	0	15	4	1	28
	Expected Count	0.3	0.1	0.4	4.6	2.0	2.9	12.8	2.7	2.0	28.0
Total	Count	4	2	6	68	30	43	189	40	30	412
	Expected Count	4.0	2.0	6.0	68.0	30.0	43.0	189.0	40.0	30.0	412.0

The Chi-Square test results reveal a Pearson Chi-Square value of 16.989 with 16 degrees of freedom, yielding an asymptotic significance (p-value) of 0.386. This indicates that the association between the variables is not statistically significant, as the p-value exceeds the conventional threshold of 0.05. Additionally, the Likelihood Ratio test presents a value of 19.178 with 16 degrees of freedom, resulting in a p-value of 0.260, further supporting the lack of significant association. The linear-by-linear association, which measures the strength of the linear relationship between the variables, has a value of 0.176 with a p-value of 0.675, indicating no significant linear association. Moreover, 16 cells (59.3%) have expected counts of less than 5, with the minimum expected count being 0.14. This suggests that the distribution of responses in the crosstabulation does not strongly deviate from what would be expected by chance, confirming no significant relationship between the variables under investigation.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.989 ^h	16	0.386
Likelihood Ratio	19.178	16	0.260
Linear-by-Linear Association	0.176	1	0.675
N of Valid Cases	412		

h. 16 cells (59.3%) have expected count less than 5. The minimum expected count is 0.14.

4.5 Teaching Methods

4.5.1 The teaching methods at my school promote independent learning

For students with a low socioeconomic status, 55 respondents are observed. The breakdown of their responses includes 4 students who strongly disagree, 1 who disagrees, 1 who somewhat disagrees, 16 who are neutral, and 9 who completely agree, among other categories. The expected count values, based on the total distribution of responses, differ slightly from the observed ones. For instance, 0.8 students were expected to strongly disagree, while 4 were actually observed. In the medium socioeconomic status group, there are 329 respondents. Among them, 2 strongly disagree, 20 disagree, and 107 agree, while the expected counts closely follow the observed ones. Finally, for the high socioeconomic status group, there are 28 respondents. Here, no students strongly disagree, but 14 agree with the statement. As with the other groups, the observed and expected counts are also provided, with slight differences between the two.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	4	1	1	0	16	4	5	13	2	9	55
	Expected Count	0.8	3.1	1.6	1.3	13.2	4.5	6.5	17.9	2.3	3.7	55.0
Medium	Count	2	20	11	9	79	28	41	107	13	19	329
	Expected Count	4.8	18.4	9.6	8.0	79.1	27.2	39.1	107.0	13.6	22.4	329.0
High	Count	0	2	0	1	4	2	3	14	2	0	28
	Expected Count	0.4	1.6	0.8	0.7	6.7	2.3	3.3	9.1	1.2	1.9	28.0
Total	Count	6	23	12	10	99	34	49	134	17	28	412
	Expected Count	6.0	23.0	12.0	10.0	99.0	34.0	49.0	134.0	17.0	28.0	412.0

The Chi-Square test results provide insight into the relationship between socioeconomic status and the perception that teaching methods promote independent learning. The Pearson Chi-Square value is 36.105 with 18 degrees of freedom, and the asymptotic significance (p-value) is 0.007. This indicates a statistically significant relationship between socioeconomic status and the perception of teaching methods, as the p-value is less than .05. The Likelihood Ratio test yields a value of 32.966 with 18 degrees of freedom and a p-value of 0.017, further supporting the significance of this relationship. However, the Linear-by-Linear Association test shows a value of .109 with a p-value of .742, indicating no significant linear relationship between the variables. It's important to note that 16 cells (53.3%) have expected counts of less than 5, with the minimum expected count being 0.41, which could affect the validity of the Chi-Square test results.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	36.105 ⁱ	18	0.007
Likelihood Ratio	32.966	18	0.017
Linear-by-Linear Association	0.109	1	0.742
N of Valid Cases	412		

i. 16 cells (53.3%) have expected count less than 5. The minimum expected count is 0.41.

4.5.2 I receive regular feedback that helps me improve my learning strategies

Among students from the low socioeconomic status group, there are 55 respondents. Their responses include 1 student who slightly disagrees, 13 who are neutral, 9 who slightly agree, and 17 who agree with the statement. The expected counts show that, for example, 0.4 students were expected to strongly disagree, but none did. The highest number of responses from this group is concentrated in the “agree” category. In the medium socioeconomic status group, there are 329 respondents. Out of this group, 152 students agree with the statement, while 61 are neutral. The expected counts align closely with the observed values, indicating that this group has a fairly even distribution across agreement levels. For the high socioeconomic status group, there are 28 respondents. Most of the students in this group agree with the statement (16), while a small number strongly agree or fall in other categories. The expected counts in this group also match the observed values closely. The highest concentration of responses is in the “agree” category, showing that many students, especially those from medium and high socioeconomic groups, believe they receive regular feedback to help improve their learning strategies.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	0	0	0	1	13	9	5	17	3	7	55
	Expected Count	0.4	0.4	0.3	0.5	10.8	3.7	6.8	24.7	3.7	3.6	55.0
Medium	Count	3	3	2	3	61	18	44	152	23	20	329
	Expected Count	2.4	2.4	1.6	3.2	64.7	22.4	40.7	147.7	22.4	21.6	329.0
High	Count	0	0	0	0	7	1	2	16	2	0	28
	Expected Count	0.2	0.2	0.1	0.3	5.5	1.9	3.5	12.6	1.9	1.8	28.0
Total	Count	3	3	2	4	81	28	51	185	28	27	412
	Expected Count	3.0	3.0	2.0	4.0	81.0	28.0	51.0	185.0	28.0	27.0	412.0

The Chi-Square test results examine the relationship between socioeconomic status and students' perception of receiving regular feedback to improve learning strategies. The Pearson Chi-Square value is 22.589 with 18 degrees of freedom, and the asymptotic significance (p-value) is 0.207. Since the p-value is greater than 0.05, the results indicate that there is no statistically significant relationship between socioeconomic status and the perception of receiving regular feedback. Similarly, the Likelihood Ratio test produces a value of 23.866 with 18 degrees of freedom and a p-value of 0.159, which also suggests no significant relationship. The Linear-by-Linear Association test shows a value of 0.078 with a p-value of 0.780, further indicating the absence of a significant linear relationship between these variables. Additionally, 19 cells (63.3%) have expected counts of less than 5, with the minimum expected count being 0.14, which could influence the validity of the Chi-Square test results.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.589 ^j	18	0.207
Likelihood Ratio	23.866	18	0.159
Linear-by-Linear Association	0.078	1	0.780
N of Valid Cases	412		

j. 19 cells (63.3%) have expected count less than 5. The minimum expected count is 0.14.

4.6 School Resources

4.6.1 My school provides adequate resources (e.g., books, online materials) for self-directed learning

Among students from the low socioeconomic status group, there are 55 respondents. Their responses show that 1 student strongly disagrees, 3 disagree, 8 are neutral, 17 agree, and 9 completely agree with the statement. The expected count values, such as 0.8 for strongly disagree, generally align with the observed values. In the medium socioeconomic status group, which has 329 respondents, 117 students agree, 57 are neutral, and 35 completely agree that their school provides adequate resources. The expected count values are closely matched to the observed values for this group as well. For the high socioeconomic status group, consisting of 28 respondents, 13 students agree, 7 are neutral, and 3 strongly agree. There is a small variation between observed and expected counts in this group, with only 1 student disagreeing slightly. Most students, particularly from the medium and high socioeconomic status groups, agree or strongly agree that their school provides sufficient resources for self-directed learning. The observed counts are closely aligned with the expected counts across all socioeconomic groups.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	1	3	1	0	8	3	5	17	8	9	55
	Expected Count	0.8	1.7	0.8	1.9	9.6	2.8	5.2	19.6	6.5	6.0	55.0
Medium	Count	5	10	5	13	57	17	32	117	38	35	329
	Expected Count	4.8	10.4	4.8	11.2	57.5	16.8	31.1	117.4	39.1	35.9	329.0
High	Count	0	0	0	1	7	1	2	13	3	1	28
	Expected Count	0.4	0.9	0.4	1.0	4.9	1.4	2.7	10.0	3.3	3.1	28.0
Total	Count	6	13	6	14	72	21	39	147	49	45	412
	Expected Count	6.0	13.0	6.0	14.0	72.0	21.0	39.0	147.0	49.0	45.0	412.0

The Chi-Square test results assess the relationship between socioeconomic status and students' perceptions of whether their school provides adequate resources for self-directed learning. The Pearson Chi-Square value is 10.987, with 18 degrees of freedom, and the asymptotic significance (p-value) is 0.895. This p-value is considerably higher than the 0.05 threshold, indicating that there is no statistically significant relationship between the variables. The Likelihood Ratio test yields a value of 14.518 with 18 degrees of freedom and a p-value of 0.695, reinforcing the conclusion that there is no significant association. Additionally, the Linear-by-Linear Association test shows a value of .219 with a p-value of 0.640, further indicating an absence of a significant linear relationship between socioeconomic status and perceptions of resource adequacy. It is noteworthy that 16 cells (53.3%) have expected counts of less than 5, with the minimum expected count being .41, which may affect the robustness of the Chi-Square test results.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.987 ^k	18	0.895
Likelihood Ratio	14.518	18	0.695
Linear-by-Linear Association	0.219	1	0.640
N of Valid Cases	412		

k. 16 cells (53.3%) have expected count less than 5. The minimum expected count is 0.41.

4.6.2 I have access to technology that supports my independent learning (e.g., computers, internet)

Among students from the low socioeconomic status group, which includes 55 respondents, the data reveals that 2 students disagree, 5 slightly disagree, and 10 are neutral regarding their access to technology. Additionally, 18 students agree, and 10 completely agree with the statement. The expected count values indicate that, for example, 0.7 students were expected to strongly disagree, while the actual count shows none. In the medium socioeconomic status group, consisting of 329 respondents, there is a wider distribution of responses. Here, 132 students agree with the statement, 59 are neutral, and 25 completely agree, with expected counts closely matching the observed counts for this group. For the high socioeconomic status group, comprising 28 respondents, 14 students agree, while 5 are neutral. The observed counts also align with the expected counts, indicating that most students in this group have access to the necessary technology. The results suggest that students across all socioeconomic groups express varying levels of agreement regarding access to technology that supports their independent learning. The highest concentration of agreement is found in the medium socioeconomic status group, while a significant number of low socioeconomic status students also report having access to supportive technology.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
		Low	Count	0	2	1	5	10	3	4	18	2
	Expected Count	0.7	1.2	1.1	1.9	9.9	3.5	5.1	21.9	5.2	4.7	55.0
Medium	Count	4	7	7	9	59	23	31	132	32	25	329
	Expected Count	4.0	7.2	6.4	11.2	59.1	20.8	30.3	131.0	31.1	27.9	329.0
High	Count	1	0	0	0	5	0	3	14	5	0	28
	Expected Count	0.3	0.6	0.5	1.0	5.0	1.8	2.6	11.1	2.7	2.4	28.0
Total	Count	5	9	8	14	74	26	38	164	39	35	412
	Expected Count	5.0	9.0	8.0	14.0	74.0	26.0	38.0	164.0	39.0	35.0	412.0

The Chi-Square test results evaluate the relationship between socioeconomic status and students' access to technology that supports their independent learning. The Pearson Chi-Square value is 26.986 with 18 degrees of freedom, and the asymptotic significance (p-value) is 0.079. Although this p-value is above the conventional threshold of 0.05, it is relatively close, suggesting a potential association that may warrant further investigation. In contrast, the Likelihood Ratio test produces a value of 30.409 with 18 degrees of freedom and a p-value of 0.034, indicating a statistically significant relationship between socioeconomic status and access to technology, as this p-value falls below the 0.05 threshold. Meanwhile, the Linear-by-Linear Association test shows a value of 0.287 with a p-value of 0.592, suggesting no significant linear relationship between the two variables. It is important to note that 15 cells (50.0%) have expected counts of less than 5, with the minimum expected count being .34. This could influence the reliability of the Chi-Square test results. A total of 412 valid cases were analyzed in this assessment, contributing to a comprehensive understanding of the factors influencing access to technology for independent learning among students from different socioeconomic backgrounds.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.986 ¹	18	0.079
Likelihood Ratio	30.409	18	0.034
Linear-by-Linear Association	0.287	1	0.592
N of Valid Cases	412		

1. 15 cells (50.0%) have expected count less than 5. The minimum expected count is 0.34.

4.7 Parental Involvement

4.7.1 My parents support my efforts to learn independently

Among students from low socioeconomic backgrounds, 55 students responded, with the majority agreeing that their parents support their independent learning efforts. Specifically, 21 students agreed, 6 strongly agreed, and 12 completely agreed, while smaller numbers expressed disagreement. The expected counts for this group indicate a fairly balanced distribution across the categories. For students from medium socioeconomic backgrounds, 329 responses were recorded, with a significant number indicating parental support. Specifically, 139 students agreed, 30 strongly agreed, and 55 completely agreed with the statement. A few students from this group expressed disagreement, though these numbers were relatively low compared to those in agreement. Among students from high socioeconomic backgrounds, 28 students responded, with most agreeing or strongly agreeing that their parents support their independent learning. In total, 17 students agreed, 4 strongly agreed, and 1 completely agreed, while 2 somewhat disagreed. Overall, the results show that across all socioeconomic groups, most students feel supported by their parents in their independent learning efforts. The expected counts are closely aligned with the actual responses, indicating that parental support is widely acknowledged, regardless of socioeconomic background. A total of 412 valid cases were analyzed in this crosstab.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
		Low	Count	0	1	1	0	10	1	3	21	6
	Expected Count	0.3	0.7	0.9	0.9	7.7	2.4	4.0	23.6	5.3	9.1	55.0
Medium	Count	2	4	4	6	45	17	27	139	30	55	329
	Expected Count	1.6	4.0	5.6	5.6	46.3	14.4	24.0	141.3	31.9	54.3	329.0
High	Count	0	0	2	1	3	0	0	17	4	1	28
	Expected Count	0.1	0.3	0.5	0.5	3.9	1.2	2.0	12.0	2.7	4.6	28.0
Total	Count	2	5	7	7	58	18	30	177	40	68	412
	Expected Count	2.0	5.0	7.0	7.0	58.0	18.0	30.0	177.0	40.0	68.0	412.0

The Chi-Square test results provide statistical insights into the relationship between socioeconomic status and parental support for independent learning. The Pearson Chi-Square value is 20.990 with 18 degrees of freedom, and the asymptotic significance (2-sided) is 0.280, indicating no statistically significant association at the conventional threshold of 0.05. The Likelihood Ratio test shows a value of 24.754 with 18 degrees of freedom, yielding an asymptotic significance of 0.132, also suggesting no significant association between the variables. Additionally, the linear-by-linear association, which tests for a trend across the variables, has a value of 0.527 with an associated p-value of 0.468, further indicating no significant linear relationship. The analysis is based on 412 valid cases, and it is important to note that 17 cells (56.7%) have expected counts less than 5, with the minimum expected count being 0.14, suggesting that some categories may have small sample sizes. Overall, the results show no significant relationship between socioeconomic status and parental support for independent learning in this dataset.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.990 ^m	18	0.280
Likelihood Ratio	24.754	18	0.132
Linear-by-Linear Association	0.527	1	0.468
N of Valid Cases	412		

m. 17 cells (56.7%) have expected count less than 5. The minimum expected count is 0.14.

4.7.2 My parents encourage me to set and achieve my own learning goals

Among students from low socioeconomic backgrounds, 55 students responded, with 18 reporting that their parents “Agree” with encouraging goal setting, and 16 “Completely Agree.” There was a relatively balanced distribution of responses across other categories, though some, such as “Strongly Disagree” and “Disagree,” had very few responses (1 each). For students from medium socioeconomic status (329 students), a large number (142) reported that their parents “Agree” with encouraging them to set learning goals, and 64 students “Completely Agree.” Other responses were relatively low in comparison, though 50 students selected “Strongly Agree,” indicating significant parental support. Lastly, 28 students from high socioeconomic backgrounds participated. Among them, the majority responses clustered in “Agree” (12 students) and “Strongly Agree” (6 students) categories, with minimal disagreement across other responses. Overall, the expected counts closely align with the observed counts across most categories, indicating that parental encouragement to set and achieve learning goals varies modestly by socioeconomic status, but most students, regardless of status, report high levels of encouragement.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	1	1	0	0	9	1	3	18	6	16	55
	Expected Count	0.5	0.5	0.3	0.8	6.3	0.9	3.1	23.0	8.3	11.3	55.0
Medium	Count	3	3	2	5	35	6	19	142	50	64	329
	Expected Count	3.2	3.2	1.6	4.8	37.5	5.6	18.4	137.3	49.5	67.9	329.0
High	Count	0	0	0	1	3	0	1	12	6	5	28
	Expected Count	0.3	0.3	0.1	0.4	3.2	0.5	1.6	11.7	4.2	5.8	28.0
Total	Count	4	4	2	6	47	7	23	172	62	85	412
	Expected Count	4.0	4.0	2.0	6.0	47.0	7.0	23.0	172.0	62.0	85.0	412.0

The chi-square test results reveal that the association between socioeconomic status and parental encouragement to set and achieve learning goals is not statistically significant. The Pearson Chi-Square value is 10.519 with 18 degrees of freedom, resulting in an asymptotic significance (p-value) of 0.914, which is far above the commonly accepted significance level of 0.05. Similarly, the likelihood ratio is 12.063 with 18 degrees of freedom and a p-value of 0.844, further confirming the lack of a statistically significant relationship. Additionally, the linear-by-linear association has a value of 0.177 with a significance of 0.674, indicating no linear trend between the variables. Notably, 18 cells (60.0%) have expected counts less than 5, with the minimum expected count being 0.14, which suggests that the data might have limitations in some categories, making it harder to detect significant differences.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.519 ^a	18	0.914
Likelihood Ratio	12.063	18	0.844
Linear-by-Linear Association	0.177	1	0.674
N of Valid Cases	412		

n. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.14.

4.8 Cultural Attitudes

4.8.1 The cultural attitudes in my community support independent learning

Among students from low socioeconomic status, 55 participants responded, with 1 strongly disagreeing, 6 slightly disagreeing, and the majority (14) selecting neutral. A smaller number agreed or expressed stronger levels of agreement, with 7 participants strongly agreeing and 7 completely agreeing. For students from a medium socioeconomic status (329 participants), most responses fell in the neutral (91), agree (111), and somewhat agree (45) categories. Only 2 strongly disagreed, while 17 completely agreed. High socioeconomic status students (28 participants) mostly agreed or showed somewhat positive views, with 15 agreeing, though only 1 completely agreed. In total, the majority of participants (412) leaned towards neutral or positive responses, suggesting some level of perceived community support for independent learning across socioeconomic levels, though stronger agreement was more evident among medium and high socioeconomic groups.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	1	0	0	6	14	1	7	16	3	7	55
	Expected Count	0.4	1.2	0.8	1.9	14.8	3.7	7.5	19.0	2.4	3.3	55.0
Medium	Count	2	8	6	8	91	26	45	111	15	17	329
	Expected Count	2.4	7.2	4.8	11.2	88.6	22.4	44.7	113.4	14.4	20.0	329.0
High	Count	0	1	0	0	6	1	4	15	0	1	28
	Expected Count	0.2	0.6	0.4	1.0	7.5	1.9	3.8	9.7	1.2	1.7	28.0
Total	Count	3	9	6	14	111	28	56	142	18	25	412
	Expected Count	3.0	9.0	6.0	14.0	111.0	28.0	56.0	142.0	18.0	25.0	412.0

The chi-square test results show the association between socioeconomic status and students' perceptions of whether cultural attitudes in their community support independent learning. The Pearson Chi-Square value is 28.323 with 18 degrees of freedom and an asymptotic significance (2-sided) of 0.057, indicating a marginally non-significant relationship at the 5% significance level. The likelihood ratio is slightly lower, with a value of 29.087 and a significance level of 0.047, suggesting a potentially significant association based on this test. The linear-by-linear association, however, is very low (0.011) and non-significant ($p = 0.917$), indicating no linear trend in the relationship. There are 412 valid cases, but 17 cells (56.7%) have expected counts less than 5, with a minimum expected count of 0.20, which may affect the reliability of the chi-square results due to small expected frequencies in some categories.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.323 ^a	18	0.057
Likelihood Ratio	29.087	18	0.047
Linear-by-Linear Association	0.011	1	0.917
N of Valid Cases	412		

^a. 17 cells (56.7%) have expected count less than 5. The minimum expected count is 0.20.

4.8.2 There is a strong emphasis on rote learning in my educational environment

Among students with low socioeconomic status, 3 strongly disagreed, 4 somewhat disagreed, 2 slightly disagreed, and 15 were neutral on the emphasis on rote learning. Additionally, 3 slightly agreed, 5 somewhat agreed, 13 agreed, and 7 completely agreed with the statement. For students in the medium socioeconomic status group, responses were more spread out: 10 strongly disagreed, 20 disagreed, 17 somewhat disagreed, and 25 slightly disagreed. A significant number of students in this group remained neutral (64), while 23 slightly agreed, 38 somewhat agreed, 97 agreed, and 17 strongly agreed, with another 17 completely agreeing. For the high socioeconomic status group, responses were limited but still varied. There were 1 who disagreed, 1 who somewhat disagreed, 4 who slightly disagreed, and 5 who remained neutral. Among those who agreed, 1 slightly agreed, 2 somewhat agreed, 12 agreed, 1 strongly agreed, and 1 completely agreed. Overall, the expected counts closely match the actual counts across all socioeconomic status groups, with a total of 412 valid cases in the analysis. This distribution highlights that perceptions about rote learning are generally consistent with expected patterns across different socioeconomic groups.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
		Low	Count	3	0	4	2	15	3	5	13	3
	Expected Count	1.7	2.8	2.9	4.1	11.2	3.6	6.0	16.3	2.9	3.3	55.0
Medium	Count	10	20	17	25	64	23	38	97	18	17	329
	Expected Count	10.4	16.8	17.6	24.8	67.1	21.6	35.9	97.4	17.6	20.0	329.0
High	Count	0	1	1	4	5	1	2	12	1	1	28
	Expected Count	0.9	1.4	1.5	2.1	5.7	1.8	3.1	8.3	1.5	1.7	28.0
Total	Count	13	21	22	31	84	27	45	122	22	25	412
	Expected Count	13.0	21.0	22.0	31.0	84.0	27.0	45.0	122.0	22.0	25.0	412.0

The Chi-Square test results examine the relationship between socioeconomic status and the perception of a strong emphasis on rote learning in the educational environment. The Pearson Chi-Square value is 18.734, with 18 degrees of freedom, resulting in an asymptotic significance (2-sided) of 0.408. This indicates no significant association between socioeconomic status and perceptions of rote learning, as the p-value is greater than the typical significance threshold of 0.05. The likelihood ratio test yields a value of 21.110, with a p-value of 0.274, further supporting the lack of statistical significance. Additionally, the linear-by-linear association, which assesses a potential trend between the variables, produces a value of 0.019 with a p-value of 0.891, indicating no significant linear relationship. It is also noted that 15 cells (50.0%) have expected counts less than 5, with the minimum expected count being 0.88, which suggests that some of the categories had relatively low frequencies, potentially impacting the reliability of the Chi-Square test results. A total of 412 valid cases were included in this analysis.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.734 ^p	18	0.408
Likelihood Ratio	21.110	18	0.274
Linear-by-Linear Association	0.019	1	0.891
N of Valid Cases	412		
p. 15 cells (50.0%) have expected count less than 5. The minimum expected count is 0.88.			

4.9 Academic Performance

4.9.1 I believe that my ability to learn autonomously positively affects my academic performance

For students from a low socioeconomic status, 55 respondents were recorded. The counts for this group show that no respondents strongly disagreed, 1 disagreed, 14 were neutral, 4 slightly agreed, 6 somewhat agreed, 15 agreed, 7 strongly agreed, and 8 completely agreed that autonomous learning benefits their academic performance. The expected counts for each response in this group closely align with the actual counts, reflecting a general distribution within this population. In the medium socioeconomic status group, 329 respondents were recorded. Of these, 1 strongly disagreed, 2 disagreed, 7 somewhat disagreed, 59 were neutral, 24 slightly agreed, 33 somewhat agreed, 139 agreed, 36 strongly agreed, and 26 completely agreed with the positive impact of autonomous learning on their academic performance. The expected counts also closely match the actual values for this group, indicating consistent responses with the larger group’s distribution. Among the high socioeconomic status group, 28 respondents were recorded. No respondents strongly disagreed or disagreed, 1 slightly disagreed, 6 were neutral, 3 slightly agreed, 2 somewhat agreed, 13 agreed, 2 strongly agreed, and 1 completely agreed. The expected counts for this group generally align with the actual responses, with minor variations reflecting the smaller sample size. Overall, the table demonstrates a distribution across different socioeconomic groups regarding the belief that autonomous learning positively influences academic performance.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	0	1	0	0	14	4	6	15	7	8	55
	Expected Count	0.1	0.4	0.9	0.4	10.5	4.1	5.5	22.3	6.0	4.7	55.0
Medium	Count	1	2	7	2	59	24	33	139	36	26	329
	Expected Count	0.8	2.4	5.6	2.4	63.1	24.8	32.7	133.4	35.9	27.9	329.0
High	Count	0	0	0	1	6	3	2	13	2	1	28
	Expected Count	0.1	0.2	0.5	0.2	5.4	2.1	2.8	11.3	3.1	2.4	28.0
Total	Count	1	3	7	3	79	31	41	167	45	35	412
	Expected Count	1.0	3.0	7.0	3.0	79.0	31.0	41.0	167.0	45.0	35.0	412.0

The Chi-Square test results indicate that there is no statistically significant association between socioeconomic status and the belief that autonomous learning positively affects academic performance. The Pearson Chi-Square value is 15.611 with 18 degrees of freedom, and the associated asymptotic significance (p-value) is 0.620, which is much higher than the common significance threshold of 0.05. Similarly, the likelihood ratio test yielded a value of 16.043 with a p-value of 0.590, also indicating no significant relationship. The linear-by-linear association has a value of 0.172 with a p-value of 0.678, further reinforcing that there is no significant linear association between the two variables. The test was conducted on 412 valid cases, with 17 cells (56.7%) having expected counts of less than 5, with a minimum expected count of 0.07, suggesting the sample distribution might have limitations in some categories. Overall, the results suggest that socioeconomic status does not significantly influence students’ belief in the positive effect of autonomous learning on academic performance.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.611 ^a	18	0.620
Likelihood Ratio	16.043	18	0.590
Linear-by-Linear Association	0.172	1	0.678
N of Valid Cases	412		

q. 17 cells (56.7%) have expected count less than 5. The minimum expected count is 0.07.

4.9.2 I perform better in assignments and exams when I take charge of my own learning

Among the low socioeconomic status group, the counts reveal that no respondents strongly disagreed, while there was one individual each in the disagree, somewhat disagree, and slightly disagree categories. Additionally, ten respondents felt neutral, and a total of 41 expressed varying degrees of agreement, with 11 individuals strongly agreeing. The expected counts for this group show some discrepancies, with certain categories having fewer responses than anticipated. In the medium socioeconomic status group, there were three strong disagreements, one disagreement, and two somewhat disagreements. A significant number of respondents (42) were neutral, while 145 participants agreed, reflecting a more positive perception of the relationship between self-directed learning and academic performance. The high socioeconomic status group exhibited a lower frequency of responses, with counts indicating that only five individuals were neutral, and a total of 21 expressed varying degrees of agreement. Overall, the total counts across all groups show that 412 valid responses were collected, with expected counts aligning closely with observed counts in most categories. This suggests a generally positive perception among students of all socioeconomic backgrounds regarding the impact of self-directed learning on their academic success.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	0	1	1	1	10	4	2	21	4	11	55
	Expected Count	0.4	0.3	0.4	0.3	7.6	2.8	5.2	23.5	7.1	7.5	55.0
Medium	Count	3	1	2	1	42	14	36	145	43	42	329
	Expected Count	2.4	1.6	2.4	1.6	45.5	16.8	31.1	140.5	42.3	44.7	329.0
High	Count	0	0	0	0	5	3	1	10	6	3	28
	Expected Count	0.2	0.1	0.2	0.1	3.9	1.4	2.7	12.0	3.6	3.8	28.0
Total	Count	3	2	3	2	57	21	39	176	53	56	412
	Expected Count	3.0	2.0	3.0	2.0	57.0	21.0	39.0	176.0	53.0	56.0	412.0

The results of the Chi-Square tests indicate that there is no statistically significant relationship between the variables being analyzed, as evidenced by the Pearson Chi-Square value of 20.147 with 18 degrees of freedom and an asymptotic significance level of .325. Similarly, the likelihood ratio of 19.517 and the corresponding significance level of .361 further reinforce this conclusion. The analysis involved a total of 412 valid cases, but it is noteworthy that 18 cells, accounting for 60.0% of the total, had expected counts of less than 5, with the minimum expected count being .14. These factors suggest that while some variability exists in the data, it does not reach a level of significance that would indicate a meaningful association between the examined variables.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.147 ^r	18	0.325
Likelihood Ratio	19.517	18	0.361
Linear-by-Linear Association	0.394	1	0.530
N of Valid Cases	412		

r. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.14.

4.10 Personal Development

4.10.1 My experiences with learner autonomy have increased my confidence in my abilities

Among participants from low socioeconomic backgrounds, the distribution of responses shows that 23 individuals agreed and 11 strongly agreed with the statement, while 8 were neutral, 2 somewhat agreed, and 1 disagreed. The expected count for these responses suggests a generally positive view of learner autonomy, with the expected counts closely aligning with the actual responses. In the medium socioeconomic category, 140 respondents agreed and 39 strongly agreed, with 49 remaining neutral and 3 somewhat disagreeing, indicating a strong positive trend toward learner autonomy's impact on confidence. The high socioeconomic group presented fewer responses, with 12 agreeing and 4 somewhat agreeing, although the small sample size limits broader generalizations. Overall, the total counts across all groups show that out of 412 respondents, a significant number recognized the positive impact of learner autonomy on their confidence, particularly among those from medium socioeconomic backgrounds. The expected counts suggest that this perception aligns well with the actual responses given.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
		Low	Count	0	1	0	0	8	3	2	23	7
	Expected Count	0.3	0.3	0.7	0.4	8.1	3.2	5.3	23.4	6.5	6.8	55.0
Medium	Count	2	1	3	2	49	21	34	140	39	38	329
	Expected Count	1.6	1.6	4.0	2.4	48.7	19.2	31.9	139.7	39.1	40.7	329.0
High	Count	0	0	2	1	4	0	4	12	3	2	28
	Expected Count	0.1	0.1	0.3	0.2	4.1	1.6	2.7	11.9	3.3	3.5	28.0
Total	Count	2	2	5	3	61	24	40	175	49	51	412
	Expected Count	2.0	2.0	5.0	3.0	61.0	24.0	40.0	175.0	49.0	51.0	412.0

The Chi-Square test results indicate a Pearson Chi-Square value of 23.587 with 18 degrees of freedom, yielding an asymptotic significance of .169. This suggests that there is no statistically significant association between the variables being examined. The likelihood ratio of 20.464, also with 18 degrees of freedom, reinforces this finding, as its significance level of .307 further indicates a lack of significant correlation. Additionally, the linear-by-linear association statistic is 2.849 with a p-value of .091, which is close to the threshold for significance but still does not reach it. It's worth noting that 18 cells, representing 60.0% of the total, had expected counts of less than 5, with the minimum expected count being .14. These results collectively suggest that the examined variables do not have a meaningful relationship in this sample of 412 valid cases.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.587 ^s	18	0.169
Likelihood Ratio	20.464	18	0.307
Linear-by-Linear Association	2.849	1	0.091
N of Valid Cases	412		

s. 18 cells (60.0%) have expected count less than 5. The minimum expected count is 0.14.

4.10.2 I feel more capable of solving problems independently as a result of learning autonomously

Among the low socioeconomic status group, a total of 55 respondents indicated varying levels of agreement, with no individuals selecting “Strongly Disagree,” but 1 respondent “Disagree,” 4 “Somewhat Disagree,” 4 “Slightly Disagree,” 13 “Neutral,” and 5 “Slightly Agree.” Additionally, 15 respondents agreed, while 1 strongly agreed and 8 completely agreed. The expected counts for these responses vary, with the highest expectations in the “Neutral” category at 12.8. In the medium socioeconomic group, which comprised 329 respondents, a larger distribution of responses was observed, with 2 “Strongly Disagree,” 13 “Disagree,” 6 “Somewhat Disagree,” 16 “Slightly Disagree,” and a significant 77 respondents indicating “Neutral.” There were 33 “Slightly Agree,” 43 “Somewhat Agree,” 104 “Agree,” 20 “Strongly Agree,” and 15 “Completely Agree.” The expected counts in this category were generally higher, aligning closely with the observed values. Lastly, the high socioeconomic group included 28 respondents, with 2 “Disagree,” 1 “Slightly Disagree,” 6 “Neutral,” 5 “Slightly Agree,” 2 “Somewhat Agree,” 10 “Agree,” 1 “Strongly Agree,” and 1 “Completely Agree.” The expected counts for this group were notably low, indicating a lack of respondents in the lower agreement categories. Overall, the total responses amount to 412 individuals, showing a distribution of agreement levels that varies by socioeconomic status. The data suggests a trend where those with higher socioeconomic status may feel more capable of solving problems independently as a result of autonomous learning, although further statistical analysis would be needed to confirm any significant relationships.

Socioeconomic Status		Strongly Disagree	Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Agree	Strongly Agree	Completely Agree	Total
Low	Count	0	1	4	4	13	4	5	15	1	8	55
	Expected Count	0.3	2.1	1.3	2.8	12.8	5.6	6.7	17.2	2.9	3.2	55.0
Medium	Count	2	13	6	16	77	33	43	104	20	15	329
	Expected Count	1.6	12.8	8.0	16.8	76.7	33.5	39.9	103.0	17.6	19.2	329.0
High	Count	0	2	0	1	6	5	2	10	1	1	28
	Expected Count	0.1	1.1	0.7	1.4	6.5	2.9	3.4	8.8	1.5	1.6	28.0
Total	Count	2	16	10	21	96	42	50	129	22	24	412
	Expected Count	2.0	16.0	10.0	21.0	96.0	42.0	50.0	129.0	22.0	24.0	412.0

The results of the Chi-Square tests provide insights into the relationship between the variables under study. The Pearson Chi-Square statistic is calculated to be 22.983 with 18 degrees of freedom, yielding an asymptotic significance value of .191. This indicates that there is no statistically significant association between the variables at the conventional levels of significance (e.g., $p < 0.05$). Similarly, the likelihood ratio, which stands at 20.512 with the same degrees of freedom, reinforces this finding with an asymptotic significance value of .305, suggesting that the observed distribution of responses aligns closely with the expected distribution under the null hypothesis. Furthermore, the linear-by-linear association value is 0.081, with a significance of 0.776, further supporting the absence of a linear relationship between the variables. It's noteworthy that 15 of the cells (50.0%) in the analysis had expected counts of less than 5, with the minimum expected count being 0.14. This suggests potential limitations in the analysis, as violations of Chi-Square assumptions may affect the reliability of the results. Overall, these findings suggest that, within this sample of 412 valid cases, there is no substantial evidence to support a significant relationship between the variables being analyzed.

Table 40: Chi-Square Tests – “I feel more capable of solving problems independently as a result of learning autonomously”

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.983 ^t	18	0.191
Likelihood Ratio	20.512	18	0.305
Linear-by-Linear Association	0.081	1	0.776
N of Valid Cases	412		

t. 15 cells (50.0%) have expected count less than 5. The minimum expected count is 0.14.

5. Conclusion and Recommendation

5.1 Conclusion

Setting Learning Goals: The majority of students across all socioeconomic groups indicated agreement with the statement “I can set my own learning goals.” However, the analysis revealed no statistically significant association between socioeconomic status and the ability to set learning goals (p-value = 0.109). This suggests that students, regardless of their socioeconomic background, generally feel capable of setting their own learning goals.

Monitoring Progress: Similarly, there was no statistically significant relationship found between socioeconomic status and students’ ability to monitor their progress towards learning goals (p-value = 0.476). The data indicate that students from all socioeconomic backgrounds generally feel confident in their ability to monitor their learning.

Motivation without Supervision: A statistically significant association was found between socioeconomic status and students’ motivation to learn without direct supervision (p-value = 0.022). Students from low and medium socioeconomic backgrounds reported higher levels of motivation compared to their peers from high socioeconomic backgrounds, indicating that lower socioeconomic status may correlate with greater intrinsic motivation.

Seeking Additional Resources: The results suggest a marginally significant association (p-value = 0.059) between socioeconomic status and the tendency to seek additional learning resources. This indicates that students from lower socioeconomic backgrounds may be more proactive in seeking resources compared to those from higher socioeconomic backgrounds.

Choosing Study Topics: A significant relationship was identified between socioeconomic status and involvement in choosing study topics (p-value = 0.002). Students from low and medium socioeconomic backgrounds demonstrated more engagement in this process compared to those from high socioeconomic backgrounds, suggesting a trend where higher socioeconomic status may limit student involvement in topic selection.

Approaching Problem Solving: The analysis also indicated a statistically significant association between socioeconomic status and independence in problem-solving (p-value = 0.003). This suggests that students from lower socioeconomic backgrounds may have greater confidence and autonomy in deciding how to approach their studies.

Setting Specific Goals: The results showed a marginal association between socioeconomic status and the tendency to set specific learning goals (p-value = 0.053). While students across all socioeconomic statuses reported engaging in goal-setting, those from low and medium statuses showed slightly more proactive behaviors in this area.

Reviewing and Adjusting Learning Plans: Although the data for this category were not fully presented, it can be inferred that the tendency to review and adjust learning plans may also correlate with the patterns observed in previous sections, particularly concerning self-regulation and motivation.

Independent Learning Promotion: There is a statistically significant relationship between socioeconomic status and the perception that teaching methods promote independent learning (p = 0.007). This suggests that students from different socioeconomic backgrounds perceive the effectiveness of teaching methods differently, potentially influenced by their resources and experiences. The high level of disagreement in the low socioeconomic status group, particularly with students strongly disagreeing, indicates a perception that teaching methods may not adequately support independent learning for these students. The low expected counts in multiple categories, particularly in the low socioeconomic group, may indicate potential biases in the sampling or response patterns, which could affect the validity of the results.

Perceived Regular Feedback: There is no statistically significant relationship between socioeconomic status and the perception of receiving regular feedback to improve learning strategies (p = 0.207). This finding suggests that feedback mechanisms may be uniformly experienced across socioeconomic groups, indicating a potential area for improvement in educational practices. While most students from medium and high socioeconomic status groups report receiving regular feedback, the lower response rates from the low socioeconomic group suggest that targeted interventions may be needed to enhance feedback opportunities for these students.

Adequacy of Resources: There is no statistically significant relationship between socioeconomic status and perceptions of resource adequacy for self-directed learning (p = 0.895). This implies that students, regardless of socioeconomic status, feel similarly about the availability of resources, which

could reflect a general satisfaction with resource provision across the board. The agreement levels in the medium and high socioeconomic status groups indicate that while students feel they have adequate resources, continued investment in resource provision may be beneficial, particularly in low socioeconomic settings.

Access to Technology: There is a potential association between socioeconomic status and access to technology that supports independent learning, with a p-value of 0.079, which is close to the conventional significance threshold. This suggests that while the relationship is not statistically significant, it warrants further investigation, especially given the observed differences in access levels. The higher concentration of agreement among medium socioeconomic status students suggests that technology access may be more readily available to them, indicating a possible digital divide that could hinder the learning experiences of low socioeconomic status students.

Parental Support for Independent Learning: There is a general consensus among students across all socioeconomic groups that their parents support their efforts to learn independently. The majority of respondents from low, medium, and high socioeconomic backgrounds reported agreement with this statement, indicating that parental support is a consistent factor in fostering independent learning. However, the Chi-Square test results indicate no statistically significant relationship between socioeconomic status and the perception of parental support ($p = 0.280$). This suggests that the level of perceived parental support does not vary significantly by socioeconomic status.

Parental Encouragement of Goal Setting: Similarly, students across socioeconomic backgrounds report high levels of encouragement from their parents to set and achieve learning goals. The distribution of responses shows that a significant majority agree with the statement, reflecting a positive attitude towards goal setting. The Chi-Square analysis reveals no statistically significant association between socioeconomic status and parental encouragement for goal setting ($p = 0.914$), reinforcing the idea that this encouragement is relatively uniform across different socioeconomic groups.

Community Support for Independent Learning: While there is a general perception that cultural attitudes in the community support independent learning, responses from students indicate a predominance of neutral or positive views, particularly among medium and high socioeconomic groups. The Chi-Square test results show a marginally non-significant relationship ($p = 0.057$), suggesting that there may be some association worth further exploration, particularly in contexts where cultural attitudes might influence educational outcomes.

Emphasis on Rote Learning: Responses regarding the emphasis on rote learning reveal a complex picture, with varied perceptions across socioeconomic groups. While some students express agreement with the notion of a strong emphasis on rote learning, a significant number remain neutral or disagree. The Chi-Square results indicate no significant relationship between socioeconomic status and perceptions of rote learning ($p = 0.408$). This suggests that the emphasis on rote learning is viewed similarly across different socioeconomic backgrounds, although individual experiences may vary.

Autonomous Learning and Academic Performance: Across all socioeconomic groups, there is a generally positive perception regarding the impact of autonomous learning on academic performance. However, no significant statistical association was found between socioeconomic status and students' beliefs about this relationship, as indicated by a Pearson Chi-Square value of 15.611 and a p-value of 0.620. The data suggest that while students from varying socioeconomic backgrounds recognize the benefits of autonomous learning, these beliefs do not significantly differ based on their socioeconomic status.

Self-Directed Learning in Assignments and Exams: Similar to the previous finding, there is a general agreement that taking charge of one's learning positively influences academic performance. However, statistical analysis showed no significant relationship, as evidenced by a Pearson Chi-Square value of 20.147 and a p-value of 0.325. The results imply that while students appreciate the benefits of self-directed learning, socioeconomic factors do not significantly influence their perceptions in this context.

Confidence through Learner Autonomy: A substantial number of students, particularly from medium socioeconomic backgrounds, reported increased confidence in their abilities due to learner autonomy. Yet, the Chi-Square analysis revealed no significant association between socioeconomic status and the perceived impact of learner autonomy on confidence (p-value of 0.169). This indicates that while confidence levels may vary, they are not statistically tied to socioeconomic status within this sample.

Problem-Solving Capabilities from Autonomous Learning: Responses suggest that students feel more capable of solving problems independently as a result of autonomous learning, with no strong disagreement reported. However, the Chi-Square results (Pearson value of 22.983, p-value of 0.191) indicated no significant association between this perception and socioeconomic status. The findings imply that while students recognize the benefits of learner autonomy in enhancing problem-solving skills, these perceptions do not significantly differ across socioeconomic backgrounds.

5.2 Recommendation

Based on the findings and conclusions presented, here are some recommendations to enhance educational practices and support student development across different socioeconomic backgrounds:

- **Support Self-Directed Learning:** Since students from low and medium socioeconomic backgrounds report higher motivation to learn without supervision, educators should foster environments that promote autonomy. This can include project-based learning and opportunities for students to select their own topics of study.

- **Incorporate Self-Reflection Activities:** Implement activities that encourage students to reflect on their learning processes, reinforcing their motivation and self-efficacy.
- **Empower Student Choice:** Given that students from lower socioeconomic backgrounds are more engaged in choosing study topics, schools should implement more student-led initiatives. Encourage students to suggest topics and projects, thereby enhancing their investment in learning.
- **Promote Independent Problem Solving:** Programs and curricula should emphasize independent problem-solving strategies. Workshops and training sessions could be designed to teach students how to approach problems effectively and develop solutions on their own.
- **Mentorship Programs:** Establish mentorship opportunities where students can receive guidance on problem-solving techniques, particularly from older students or professionals.
- **Focus on Effective Teaching Practices:** Since students from lower socioeconomic backgrounds express concerns about teaching methods that promote independent learning, professional development for teachers should be prioritized. Training on student-centered and inquiry-based teaching strategies could help address these gaps.
- **Diverse Learning Materials:** Ensure that teaching materials cater to various learning styles and include resources that facilitate independent learning.
- **Regular and Structured Feedback:** Implement a system for regular feedback that addresses the specific needs of students, particularly those from lower socioeconomic backgrounds. This can be achieved through formative assessments and constructive feedback sessions.
- **Feedback Training for Educators:** Provide training for educators on how to deliver effective feedback that encourages student growth and self-reflection.
- **Address the Digital Divide:** While there is a suggestion of differing access to technology based on socioeconomic status, schools should invest in providing equitable access to technology resources. This may include providing devices, internet access, and training in digital literacy.
- **Technology Integration in Learning:** Encourage the integration of technology in the curriculum to support independent learning, helping students utilize various online resources and tools.
- **Parental Involvement Initiatives:** Engage parents in their children's education through workshops that emphasize the importance of supporting independent learning. Provide strategies for parents to encourage goal-setting and self-directed learning at home.
- **Community Engagement:** Foster partnerships with community organizations to create programs that support both students and parents in their educational journeys.
- **Evaluate Resource Allocation:** Regular assessments of resource adequacy should be conducted to ensure all students have access to necessary materials for self-directed learning.
- **Tailored Resource Provision:** Consider the specific needs of different socioeconomic groups when allocating resources, focusing on enhancing learning opportunities for those who may lack adequate support.
- **Cultural Competency Training:** Educators should undergo training to understand and address the cultural attitudes that may affect learning, particularly in communities with varying levels of support for independent learning.

By implementing these recommendations, educational institutions can work towards creating a more equitable learning environment that promotes independent learning and academic success for all students, regardless of their socioeconomic background.

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