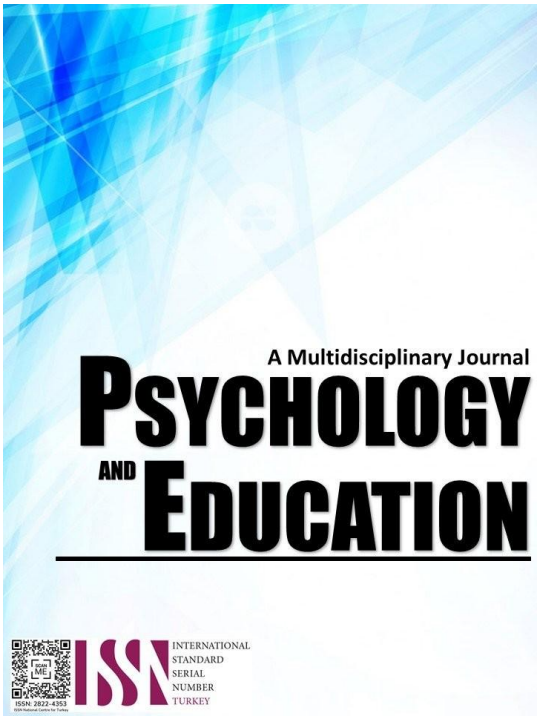
SCHOOL–BASED FEEDING PROGRAM: ITS CONTRIBUTION IN IMPROVING THE NUTRITIONAL STATUS AND LEARNING OUTCOMES OF BENEFICIARIES



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Research Article

School–Based Feeding Program: Its Contribution in Improving the Nutritional Status and Learning Outcomes of Beneficiaries

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Abstract

The contribution of regular school-based feeding programs cannot be underestimated. An investigation into whether a school-based feeding program (SBFP) can improve the intervention status, academic performance, and overall development of elementary school children. For this investigation, studies have been conducted on nutrition status, academic performance, and general development. The experiments were performed using a mixed-methods approach, incorporating measurements of food and physical activity, academic achievement records, and interviews with teachers and beneficiaries. Results showed that after 6 months of participation in school-based feeding programs, learners' weight-for-age and height-for-age indices significantly improved, along with enhanced class attendance, concentration levels, and academic performance. These results make a crucial contribution to not only combating childhood malnutrition but also enhancing educational outcomes. Further research on a school-based feeding program is needed to improve children's health and education further.

Keywords: *school-based feeding program, nutritional status, academic performance, learners' perceptions and teachers' perceptions*

Introduction

The impact of malnutrition on education is multifaceted. It not only affects the physical well-being of students but also their cognitive functions, leading to long-term consequences on their academic performance and overall development. In these coastal communities, the root causes of poor nutritional status include food insecurity, limited access to health services, and a lack of awareness about proper nutrition. This has created a cycle of undernutrition, which exacerbates the challenges these students face in their academic pursuits.

In the Iligan City Division, specifically Sta. Filomena Central School, located in the coastal area, learners in Grades 1 through 6 at Filomena are deemed highly wasted and severely wasted, and deal with the combined problems of malnourishment and subpar academic performance. These students often experience low energy levels, poor concentration, and frequent absences from school due to illness, all of which contribute to their poor academic performance.

With this, the School-Based Feeding Program is given a budget allocation. An exact amount of as much as PHP6.4 billion is allocated to supply food to undernourished children in various public schools across the country for the School Year 2021-2022 (Estandarte, 2021). This effort is being made because, according to Pollitt (2009), as cited by Sahagun (2022), the low nutrition and health of school children lead to inefficiency in the education system. Furthermore, the SBFP is necessary for children to achieve a balanced diet, which will eventually help increase their attention span and, most importantly, academic performance (Bilbar, 2020).

The Department of Education has expanded its School-Based Feeding Program to cover 3.1 million learners for the 2021-2022 academic year, with new guidelines in place for 2024-2025. The program will provide hot meals, nutritional food products, and fresh milk/fortified milk, and increase feeding days from 120 to year-round. Schools continue to accommodate Severely Wasted or Wasted learners.

In 2015, UNICEF, Philippines, stated that the Philippines has a record of a whopping 3.4 million children who are stunted (short for their age) and more than 300,000 children below the age of 5 years who are severely wasted. Furthermore, this issue is becoming a perennial child health problem. As such, the country is highly prone to various natural disasters since the risk of malnutrition gets higher during emergencies. When one asks a single Filipino family in the slums if they are satisfied with the food and nutrition being received, it is often that the answer is 'no. It is not enough, which sometimes leads to fatal cases. In fact, in 2019, Quezon had the highest number of deaths caused by malnutrition in the Philippines, CALABARZON Region, accounting for 98 out of 623 cases in this region (Statista, 2021).

Given the situation of malnutrition, and considering that this issue widens its effects on individuals. One of the calibrated responses is through feeding programs, particularly the School-Based Feeding Program or SBFP. In 1997, the Department of Education (DepEd) has a program called Breakfast Feeding Program (BFP). This is the first instance of a School-Based Feeding Program, which primarily aims to address short-term hunger. As the years passed, it expanded its scope to provide solutions for undernourished pupils in public schools nationwide. With this, different DepEd Orders are being released relevant to the implementation of the School-Based Feeding Program for it to work as intended. DepEd Order No. 33, series of 2015, was revised by the issuance of DepEd Order No. 34, series of 2015. With this, the feeding program for the 2015-2016 school year is given sufficient support and properly reported and carried out. In the next School Year, 2016-2017, the issuance is being made by virtue of DepEd Order No. 51, s. 2016. Consequently, for the School Year 2017-2022, through DepEd Order No. 39, s. 2017, the operational guidelines on the School-Based Feeding Program are directly

given among the public schools as practitioners.

As the Feeding Coordinator for seven years, the researcher had witnessed firsthand the challenges faced by undernourished learners in these schools. This research is critical not only to assess the effectiveness of the current feeding program but also to provide data that can guide future interventions aimed at improving both the nutritional status and academic performance of learners. This research was conducted during the first semester of the 2024-2025 school year. This study offered valuable insights into how school feeding programs can be optimized to better support the educational and health needs of learners in coastal communities. The findings contributed to the enhancement of feeding program design and implementation. It ultimately benefits learners who are most in need.

Research Objectives

The study aimed to determine the contributions of the School-Based Feeding Program in improving the nutritional status and learning outcomes of beneficiaries from Grade 1 to Grade 6 in Sta. Filomena Central School. The study was conducted in the first quarter of the 2024-2025 school year. Specifically, it sought to attain the following objectives:

1. To describe the demographic profile of the beneficiaries of the school feeding program, in terms of the following:
    1.1. age;
    1.2. sex;
    1.3. number of siblings;
    1.4. parents' occupation; and
    1.5. nutritional status.
2. To determine the level of perception of learners and teachers.
3. To evaluate the academic performance of the learners.
4. To explore the relationship between the perception of the learners, teachers and academic performance.
5. To investigate whether the socioeconomic profile and the perception of learners and teachers significantly predict the academic performance of the learners.
6. To formulate an action plan based on the findings of the study.

Methodology

Research Design

The research design for this study is a descriptive-correlational design, which is used to assess the relationship between the school feeding program and various factors, such as the nutritional status and academic performance of elementary school beneficiaries. The study collected quantitative data to provide a comprehensive understanding of the program's effects. A descriptive approach was employed to examine the demographic profile of the beneficiaries, including age, sex, number of siblings, and socioeconomic status. These demographic variables were analyzed using descriptive statistics to identify the trends or patterns among the beneficiaries. Additionally, the relationship between the school feeding program and learners' academic performance was examined by correlating feeding participation with changes in academic outcomes.

Respondents

The respondents for this study were Grade Levels 1 to 6 learners who were beneficiaries of the school feeding program. The total number of learner respondents was 100, with the number of learners per grade level.

The study reflected the experiences and perceptions of students, using a complete sampling. The schools were treated as separate strata, and students from Grade Levels 1 to 6 were randomly selected from each grade level to ensure a proportional representation of the learners' population at different grade levels. This method helped to capture a balanced view of how the school feeding program impacted students across different age groups. The random selection process ensured that every student within each grade level had an equal opportunity to be included in the study, minimizing bias and enhancing the generalizability of the findings.

By using this sampling approach, the study gathered data from a representative sample of students, ensuring that the results can provide a comprehensive understanding of the program's effects on students' nutritional health and academic outcomes across a range of grade levels and school environments.

Procedure

The data gathering method for this study involved the use of a structured questionnaire, which was the primary tool for collecting both quantitative data. The questionnaire had been designed to assess various factors related to the school feeding program's impact on the nutritional status and academic performance of elementary school learners in Sta. Filomena Central School. The instrument consisted of several sections, including demographic information (age, sex, socioeconomic status, and number of siblings), academic performance (before and after program participation), nutritional status (weight, height, and dietary habits), and the perceptions of students and teachers regarding the program's impact. The questionnaire was a researcher-made tool used in studies on school feeding programs, particularly from the work of Gelli et al. (2021) and the World Food Program (2019), which were recognized for their

comprehensive approach to assessing the impact of school-based nutritional interventions. These sources provided a framework that was tailored to the local context of the study.

To ensure the reliability of the instrument, Cronbach's Alpha (α) was used to assess the internal consistency of the questionnaire. A pilot test was conducted in a small sample of respondents from one of the schools in the other district before the main data collection. The Cronbach's Alpha coefficient was calculated for each section of the questionnaire (e.g., academic performance, nutritional health, and perceptions). A Cronbach's Alpha value of≥ 0.70 was considered acceptable, indicating that the instrument is reliable for the study. If the result showed $\alpha < 0.70$, indicating questionable reliability, the questionnaire was revised by adjusting or removing items that were not consistently measuring the intended constructs. This process ensured that the data collected was both valid and reliable for drawing conclusions about the effects of the school feeding program.

During the pilot testing of the survey questionnaire, it was discovered that both teachers and learners perceived the School-Based Feeding Program as 'Very Good'. A mean score of 4.00 from both groups indicated that the respondents were fully attentive, and the objectives of the questionnaire were precise, appropriate, and comprehensive relative to the respondents' perceptions.

Data Analysis

The data analysis for this study involved quantitative and qualitative techniques to address the research questions related to the effects of the school feeding program on the nutritional status and learning outcomes of elementary school students. The data collected through the structured questionnaire, which included demographic information, academic performance, nutritional status, and perceptions of the program, were analyzed using statistical tools appropriate for each research question.

For objectives 1 and 3, Frequency and Percentage were used to describe the demographic profile of the beneficiaries of the school feeding program and to evaluate the academic performance of the learners. For objective 2, to determine the level of perception among learners and teachers. For objective 4, Pearson's R Correlation explores the relationship between perception and academic performance. For objective 5, Regression Analysis predicted the variable among socio-demographic, perception, and academic performance of teachers.

Ethical Considerations

In conducting this study on the effects of the school, we investigate whether the socioeconomic profile and the perception of learners and teachers significantly predict the academic performance of the teachers. Feeding program on the nutritional status and learning outcomes of Sta. Filomena Central School beneficiaries, strict adherence to ethical guidelines was maintained throughout the research process. First and foremost, informed consent was obtained from all participants, including both students (with parental consent for minors) and teachers. The participants were fully informed of the study's objectives, procedures, potential risks, and benefits. Consent forms clearly explained that participation is voluntary and that participants can withdraw from the study at any point without any consequences or negative impact on their academic standing or relationship with the school.

To ensure confidentiality and anonymity, all personal data collected, including responses to the questionnaire and interview recordings, was stored securely and accessible only to the research team. Identifiable information was removed, and data were coded to prevent any link between the responses and individual participants. The findings were reported in aggregate form, ensuring that no individual participant or school can be identified in any published results. Lastly, ethical considerations were considered when handling sensitive topics such as students' socioeconomic status and nutritional health. The study was conducted with the utmost respect for participants' privacy and dignity, ensuring that all data is collected and handled with care.

Results and Discussion

This section presents the data collected to address the study's research questions. It also analyzes and interprets the data collected by the researchers to solve the issues in the study.

Demographic Profile of the Beneficiaries of the School-Feeding Program in terms of the following: Age, Sex, Number of Siblings, Parents' Occupation, and Nutritional Status

Table 1. *Grade Level*

Grade Level	*Frequency*	*Percentage (%)*
Grade 1	22	22.0
Grade 2	17	17.0
Grade 3	17	17.0
Grade 4	12	12.0
Grade 5	18	18.0
Grade 6	14	14.0
Total	100	100.0

Table 1 presents the distribution of the 100 learners by grade level who were enrolled in the School-Based Feeding Program (SBFP) in Sta. Filomena Central School. The results showed an even representation of learners from Grades 1 to 6, with slightly higher

participation among lower grade levels—particularly Grade 1, which had the highest frequency at 22%.

This distribution reflected both the priority placement of younger learners in the feeding program and the prevalence of early-grade malnutrition, a trend consistent with recent national studies. According to the Department of Education's SBFP Monitoring Report (2021), the greatest number of severely wasted learners are often found in lower grades due to their early developmental stage and vulnerability to nutritional deficiencies. Prioritizing these learners in school-based interventions supports their cognitive and physical growth during the most crucial years of brain development. Furthermore, Dela Luna and Talavera (2021) in their study on farming households noted that children in younger age groups tended to show poorer nutritional status due to food insecurity at home, necessitating support from school feeding programs. These findings were echoed in Panerio et al. (2022), who emphasized that early interventions were vital not only for health recovery but also for promoting consistent school attendance and performance during foundational academic years.

It is also important to highlight the impact of such programs on educational equity. As discussed by Montalbo (2021), community-based interventions, such as feeding programs, have a positive impact on academic outcomes in underserved and marginalized communities, which often include many early-grade learners.

This even distribution across grades, with emphasis on younger levels, reflected an effective implementation strategy for SBFP. It ensured equitable access while targeting those most vulnerable, a key step in addressing both nutritional recovery and educational inclusion—two intertwined components of holistic child development.

Table 2. *Age*

Age	*Frequency*	*Percentage (%)*
6 – 7 years old	38	38.0
8 – 9 years old	30	30.0
10 – 11 years old	32	32.0
Total	100	100.0

Table 2 presents the distribution of respondents according to their age. The data showed that 38% of the learners are between 6 and 7 years old, indicating that the program predominantly benefited young learners in the early stages of their formal education. The age distribution aligned with the physiological and cognitive vulnerability of children in early childhood, reinforcing the importance of targeted nutritional interventions during this developmental window.

The prominence of younger children in the program reflected the first years of formal schooling, a stage where adequate nutrition is critical for brain development, socialization, and learning capacity. According to Borres (2023), children aged 5–8 who participate in school feeding programs in Eastern Philippines show more significant improvements in cognitive performance and classroom behavior compared to older cohorts, affirming the necessity of early-age nutritional support.

In a related study, Agdeppa et al. (2022) found that Filipino children between ages 6 and 9 who were beneficiaries of government-supported feeding programs demonstrated greater gains in height-for-age and weight-for-age indices than older children. The findings suggested that earlier interventions are more effective in reversing the effects of chronic undernutrition. Meanwhile, Colting-Pulumbarit and Tolentino (2019) emphasized that school-age nutrition is particularly crucial for laying the foundation for lifelong learning and health. Their study highlighted the association between the 6–8 age range and peak synaptic development in the brain, a process that requires consistent access to high-quality nutrients—a goal supported by SBFP.

The concentration of 6–7-year-olds in this study signaled effective targeting of the SBFP towards learners at the greatest risk of developmental delays due to nutritional deficits. It validated the national strategy of prioritizing early-grade learners to break the cycle of undernutrition and low academic achievement in the long term.

Table 3. *Sex*

Sex	*Frequency*	*Percentage (%)*
Male	56	56.0
Female	44	44.0
Total	100	100.0

Table 3 displays the sex of the respondents. The result presented that 56% were male and 44% were female. This balanced representation is crucial for assessing the impacts of the School-Based Feeding Program (SBFP) across genders.

Recent studies in the Philippines have highlighted gender disparities in malnutrition among children. According to the Expanded National Nutrition Survey (ENNS) conducted by the Department of Science and Technology - Food and Nutrition Research Institute (DOST-FNRI), undernutrition remains a significant concern, with boys more significantly affected. Specifically, among school-aged children (5–10 years old), 21.3% were underweight, with boys more affected considerably. Similarly, 17.9% were stunted, with higher records in rural areas, while 8.4% were wasted. For adolescents aged 10 to 19 years, 20.7% were stunted, especially in rural areas and among those from the poorest households. About 11.5% was wasted, predominantly among males.

These findings underscore the importance of gender-sensitive approaches in nutritional interventions. The higher prevalence of

undernutrition among male children suggested that programs like the SBFP should consider tailored strategies to address these disparities. Ensuring that both boys and girls receive adequate nutrition is vital for promoting equitable health and educational outcomes.

Table 4. *Parents' Occupation*

Parents' Occupation	*Frequency*	*Percentage (%)*
Construction Workers	26	26.0
Skilled Workers	23	23.0
Self-employed	15	15.0
Farmer/Fisherman	12	12.0
Driver	20	20.0
Professionals	4	4.0
Total	100	100.0

Table 4 displays the parents' occupations of the respondents. The result showed that a significant majority were engaged in labor-intensive and low-income occupations. Specifically, 26% were construction workers, 23% were skilled workers, 20% were drivers, and 12% were farmers or fishermen. Only a small fraction (4%) were professionals. This occupational profile suggested that many families may face economic challenges that can adversely affect their children's nutritional status.

Research indicated a strong correlation between parental occupation and child nutrition in the Philippines. A study by Magsumbol et al. (2018) found that children from households headed by farmers and fishermen exhibited higher rates of undernutrition, including stunting and underweight, compared to those from other occupational groups. This is attributed to factors such as food insecurity, limited access to healthcare, and inadequate sanitation facilities prevalent in these communities.

Furthermore, the study highlighted that children from households headed by laborers and unskilled workers also faced significant nutritional challenges. These occupations often involve irregular income and limited access to nutritious food, contributing to higher malnutrition rates among children.

These findings underscore the importance of targeted nutritional interventions, such as school-based feeding programs, which can play a critical role in mitigating the adverse effects of socioeconomic disparities on child health. By providing consistent and nutritious meals, such programs can help bridge the nutritional gap for children from low-income families, thereby supporting their overall development and academic performance.

Table 5. *Number of Siblings*

Number of Siblings	*Frequency*	*Percentage (%)*
3 and below	33	33.0
4 – 5	50	50.0
6 – 9	14	14.0
10 and above	3	3.0
Total	100	100.0

Table 5 displays the number of siblings of the respondents. The results showed that a significant majority (67%) of the respondents came from families with four or more children. This suggests a prevalence of larger family sizes within the study population. In the Philippine context, larger family sizes have been associated with increased risks of child malnutrition.

A study by dela Luna and Talavera (2021) highlighted that in farming households, larger family sizes often lead to resource constraints, making it challenging to provide adequate nutrition to all children. This is particularly evident in rural areas where access to diverse and nutritious food is limited. The study emphasized that children from larger families are more susceptible to undernutrition due to the dilution of household resources.

Furthermore, the 2013 National Nutrition Survey analyzed by Laar et al. (2023) revealed that households with more members tend to experience a higher prevalence of malnutrition. The study found that as family size increases, the likelihood of children being underweight or stunted also rises, primarily due to the strain on food resources and limited access to healthcare services. These findings underscord the importance of targeted nutritional interventions, such as school-based feeding programs, especially in communities with larger family sizes. Such programs can play a crucial role in mitigating the adverse effects of resource constraints on child nutrition.

Table 6. *Nutritional Status*

Status	*Before*		*After*	
	F	*%*	*F*	*%*
Severely Wasted	15	15.0	8	8.0
Wasted	85	85.0	0	0
Normal	0	0	92	92.0
Total	100	100.0	100	100.0

Table 6 displays the respondent's nutritional status. The result presented a significant improvement in the nutritional status of the respondents following the implementation of the School-Based Feeding Program (SBFP). Initially, 15% of the students were classified as severely wasted, and 85% as wasted. Post-intervention, eight remained severely wasted, the proportion of wasted students decreased to 0%, and 92% achieved normal nutritional status.

This positive outcome aligns with the objectives of the SBFP, which aims to address hunger and undernutrition among public school children in the Philippines. According to the Department of Education's Operational Guidelines on the Implementation of the SBFP for School Year 2020–2021, the program sought to improve the nutritional status of learners by providing nutritious food products and fresh milk, thereby supporting their growth, development, and immune system enhancement.

Despite such interventions, child wasting remains a significant public health concern in the Philippines. Recent data indicated that approximately 800,000 children were still affected by wasting, with the prevalence rate hovering around 5.5% in 2021, slightly above the national target of 5%. This underscored the need for sustained and targeted nutritional programs to address acute undernutrition among children.

Level of Perception of Learners and Teachers

Table 7. *Learners' Perception*

Indicator	*Mean*	*Description*
1. The school feeding program influences your ability to focus on class before the implementation of the school feeding program.	2.18	Strongly Disagree
2.The school feeding program influences your ability to focus on class after the implementation of the school feeding program.	3.95	Strongly Agree
3. The personal hygiene taught as part of school feeding program before the implementation of the program.	2.53	Agree
4. The personal hygiene taught as part of the school feeding program after the implementation of the program	3.99	Strongly Agree
5.The nutritious food prepared in the school feeding program.	4.00	Strongly Agree
6. The encouragement and support that teachers give to participants in school feeding programs.	3.98	Strongly Agree
7. Your punctuality and attendance in school after the school – based feeding program.	3.31	Strongly Agree
8. The impact of SFP on your academic performance before participating in the feeding program.	2.37	Disagree
9. The impact of SFP on your academic performance after participating in the feeding program.	3.98	Strongly Agree
10. The milk provided by the school feeding as part of your daily meal/lunch.	4.00	Strongly Agree
Weighted Mean	3.43	Strongly Agree

Legend: *3.25–4.00, Strongly Agree; 2.50–3.24, Agree; 1.75–2.49, Disagree; 1.00–1.74, Strongly Disagree.*

Table 7 shows the perception of the learners on the implementation of the school feeding program. The result showed that the highest mean scores were recorded in indicators 5 and 10: "The nutritious food prepared in school feeding program" and "The milk provided by the school feeding as part of your daily meal/lunch," both receiving a mean of 4.00, interpreted as Strongly Agree.

This indicated a very positive perception of the food quality and the daily milk provision under the SFP. Meanwhile, the lowest mean score was recorded in indicator 1: "The school feeding program influence over your ability to focus on class before the implementation of the school feeding program," which had a mean of 2.18, interpreted as Strongly Disagree. This suggested that prior to the implementation of the program, learners struggled with classroom focus, likely due to hunger or nutritional deficiencies.

These findings implied that the SFP plays a vital role in improving learners' classroom engagement and nutritional well-being. The highly positive response to the meals and milk provision demonstrates the effectiveness of the program in addressing immediate physical needs, which in turn supports cognitive and academic functions. According to the Global Child Nutrition Foundation (2021), well-structured school meal programs not only alleviate hunger but also promote better concentration, attendance, and learning outcomes. Similarly, Alcantara and Frontreras (2024) emphasized that learners are more alert and participative when adequately nourished, underscoring the importance of regular and nutritious school meals. Furthermore, Aurino et al. (2020) argued that hunger and poor nutrition negatively impact children's ability to focus and retain information, a finding consistent with the learners' reported difficulty in maintaining focus before the SFP was in place.

In essence, the contrast between learners' perceptions before and after the program illustrated the transformative impact of school feeding initiatives, affirming their essential role in supporting both health and education outcomes in school-aged children.

Table 8 displays the perception of the teachers on the implementation of the school feeding program. The result showed that the highest mean scores, all at 4.00 and interpreted as Strongly Agree, were recorded in multiple indicators: "The school feeding program helped in the academic performance of the learners," The significance of school feeding as an avenue of providing beneficiaries the positive reinforcement, The quality of the food provided by the school feeding program, The cleanliness and safety of the food during preparation and serving areas, The improvement of learners' focus and performance in class, The convenience and time don't disrupt the school hours, The overall impact of the school feeding program on health and well-being of learner beneficiaries, and The school feeding program helps to reduce absenteeism and promotes regular school attendance. These high ratings reflected strong teacher

support for the SFP's role in enhancing both academic and health-related outcomes. The lowest mean, though still within the Strongly Agree range, was recorded in item 7: The program effectiveness in addressing the nutritional needs of learners, which received a mean of 3.87.

Table 8. *Teachers' Perception*

Indicator	*Mean*	*Description*
1. The school feeding program helps with the academic performance of the learners.	4.00	Strongly Agree
2. The participation of the learner beneficiary during school- feeding program.	3.95	Strongly Agree
3. The significance of school feeding as an avenue of providing beneficiaries the positive reinforcement.	4.00	Strongly Agree
4. The quality of the food provided by the school feeding program.	4.00	Strongly Agree
5. The cleanliness and safety of the food during preparation and serving areas.	4.00	Strongly Agree
6.The improvement of learner's focus and performance in class.	4.00	Strongly Agree
7. The program effectiveness in addressing the nutritional needs of learners.	3.87	Strongly Agree
8.The convenience and time don't disrupt the school hours.	4.00	Strongly Agree
9. The overall impact of the school feeding program on health and well- being learners' beneficiaries.	4.00	Strongly Agree
10. The school feeding program helps to reduce absenteeism and promotes regular school attendance.	4.00	Strongly Agree
Weighted Mean	3.98	Strongly Agree

Legend: *3.25–4.00, Strongly Agree; 2.50–3.24, Agree; 1.75–2.49, Disagree; 1.00–1.74, Strongly Disagree.*

These findings implied that teachers recognized the SFP as a critical intervention in improving learners' well-being and academic engagement. According to Niyibizi et al. (2024), teachers observed that school feeding programs improved student attendance, punctuality, and participation in classroom activities, thereby enhancing academic performance. Similarly, the World Food Program (2022) reported that consistent access to nutritious meals in school settings led to reduced absenteeism, enhanced concentration, and overall improvement in academic performance. The slightly lower rating for nutritional adequacy may suggest room for enhancing meal content or variety. Araujo et al. (2021) emphasized that while school meals generally meet basic energy needs, there are instances where they fall short in addressing specific micronutrient requirements.

The data affirmed that teachers hold a very positive view of the SFP's implementation, highlighting its importance in creating a supportive learning environment through adequate nutrition, increased focus, and improved school attendance.

Academic Performance of the Learners

Table 9. *Academic Performance*

Grading Scale	*Frequency*	*Percentage (%)*	*Descriptor*
90 – 100	11	11.0	Outstanding
85 – 89	77	77.0	Very Satisfactory
80 – 84	7	7.0	Satisfactory
75 – 79	5	5.0	Fairly Satisfactory
Below 75	0	0	Did not meet Expectations
Total	100	100.0	

Table 9 shows learners' academic performance. The data revealed that the highest proportion of learners, comprising 77%, attained grades in the 85–89 range, which corresponded to the "Very Satisfactory" descriptor. This indicated that most learners performed well above the minimum academic standards, suggesting a strong grasp of the competencies required for their grade level. Conversely, the lowest percentage of learners, 5%, achieved grades within the 75–79 range, which was categorized as "Fairly Satisfactory". Notably, there were no learners who received grades below 75%, meaning that all learners met or exceeded the Department of Education's minimum expectations.

The high number of learners falling under the "Very Satisfactory" category is a positive indication of the overall effectiveness of the school's instructional strategies, learning interventions, and support systems. It may also reflect the positive impact of programs such as the School-Based Feeding Program (SBFP), which aims to address short-term hunger and improve nutritional status, thereby enhancing learners' ability to focus and perform in class. Learners who are well-nourished are more likely to have better attendance, increased participation, and improved academic outcomes.

On the other hand, the presence of learners in the "Fairly Satisfactory" bracket, though minimal, is still a point of consideration. These students may be facing external challenges such as poverty, lack of parental support, learning difficulties, or limited access to instructional materials. Their performance, while still within the passing range, indicates the need for more targeted academic and psychosocial interventions, including remedial classes, individualized learning plans, or mentoring programs to help elevate their performance to higher levels.

The academic pattern reflected in this table aligns with several research findings by Gregorio et al. (2023), who conducted their study in rural public elementary schools in the Philippines. It reported that despite limited access to advanced educational resources, students were still able to achieve Very Satisfactory academic performance, especially in Science, consistently. The researchers attributed this to the presence of strong teacher commitment and community support, suggesting that a positive school environment and teacher

effectiveness can compensate for material deficiencies.

In a related study, Catayas and Hussien (2024) found that classroom management techniques and well-structured daily routines significantly influenced learners' academic performance. They concluded that when classrooms are orderly and predictable, students are more likely to remain focused, complete tasks, and perform better academically, often reaching Satisfactory to Very Satisfactory levels.

Moreover, Ventura-Escote and Piamonte (2024) examined the academic performance of learners in the post-pandemic context and discovered that most students were able to bounce back academically, with a large number achieving Very Satisfactory to Outstanding ratings. The study emphasized the role of adaptive teaching methods and emotional support in helping students recover learning gaps caused by extended school closures during the COVID-19 pandemic.

Specific to the SBFP, Lu and Dacal (2020) conducted a study in the Philippines and found that regular participation in the school-based feeding program significantly improved both the nutritional status and academic performance of the learners. Students who received daily nutritious meals demonstrated better school attendance, higher levels of concentration, and ultimately better academic grades compared to those who were not enrolled in the program.

Further supporting these findings, a systematic review by Wang et al. (2021) concluded that school feeding programs in low- and middle-income countries—including the Philippines—resulted in measurable improvements in learners' health, school attendance, and academic outcomes. The review suggested that physically healthier learners tend to perform better academically due to enhanced cognitive development and consistent school participation.

On the other hand, the 5% of learners in the "Fairly Satisfactory" range still warrant special attention. According to Suarez Castro et al. (2023), in a study conducted in Colombia, while school feeding programs contributed positively to learners' academic performance, household food insecurity, socioeconomic disadvantages, and parental unemployment remained strong barriers to academic success. These findings suggested that while feeding programs address immediate nutritional needs, long-term academic improvement also requires addressing socioeconomic inequalities.

In the Philippine context, Lacbayen (2024) emphasized that academic performance is not solely dependent on nutritional status but is also influenced by other factors such as home learning environments, parental involvement, teacher preparedness, and access to learning tools. The study recommended a multi-pronged approach, combining health and nutrition, academic support, and socio-emotional development to uplift learners, especially those performing at lower academic levels.

Additionally, the absence of any learner scoring below 75% was a notable achievement. This finding aligned with the Department of Education's commitment to inclusive and equitable education, as outlined in its operational guidelines for the SBFP (DepEd, 2020). The zero incidence of failing grades may reflect the school's effectiveness in implementing early interventions and regular monitoring of student performance. It also demonstrated that every learner received sufficient support to meet at least the minimum learning competencies, whether through in-class differentiation, peer tutoring, or additional learning time.

The results revealed that the highest proportion of learners (77%) achieved grades within the 85–89 range, classified as Very Satisfactory, while the lowest percentage of learners (5%) obtained grades in the 75–79 range, categorized as Fairly Satisfactory. Notably, there were no learners who fell below the 75% mark, indicating that all participants met or exceeded the minimum academic expectations.

The high percentage of learners in the Very Satisfactory category indicated that the majority were performing well, demonstrating strong academic engagement and a good understanding of the curriculum. This result may be attributed to interventions such as the School-Based Feeding Program (SBFP), which is known to enhance learners' cognitive performance, concentration, and classroom participation. On the other hand, the presence of a small group (5%) with Fairly Satisfactory ratings implied that while general academic performance is commendable, there remained a need to identify and support learners who may be facing academic or personal challenges despite receiving nutritional support.

Studies support these observations. For instance, Gregorio et al. (2023) noted that students in public elementary schools in rural areas of the Philippines consistently achieved Very Satisfactory performance in Science, even with limited resources, highlighting the influence of supportive learning environments. Similarly, Catayas and Hussien (2024) found that effective classroom management strategies were positively linked to higher academic performance, specifically in the Satisfactory to Very Satisfactory range. This implies that structure and routine within classrooms can significantly affect learners' success.

Furthermore, Ventura-Escote and Piamonte (2024) observed that post-pandemic academic recovery was possible, with many learners in the Very Satisfactory to Outstanding range, emphasizing the resilience of students and the importance of consistent support systems. Likewise, Lu and Dacal (2020) concluded that SBFP participation improved learners' nutritional status and academic achievement, as those who received regular meals were better able to focus and perform in school.

For those in the Fairly Satisfactory range, Lacbayen (2024) highlighted that factors such as parental involvement, teacher quality, and access to learning materials also influence performance, suggesting that nutrition alone may not be sufficient to elevate all learners.

Similarly, Suarez Castro et al. (2023) found that while school feeding programs improved performance in Colombia, socioeconomic conditions and home environments played a significant role in learners' academic outcomes.

Relationship Between the Perceptions of Learners, Teachers, and Academic Performance

Table 10. *Relationship1 Learners' Academic Performance, Learners' Perception, and Teachers' Perception*

Variables	*Academic Performance*		*Remarks*	*Decision*
	r-value	*p-value*		
Learners' perception	0.147	0.144	Not Significant	Failed to reject Ho
Teachers' perception	-0.026	0.799	Not Significant	Failed to reject Ho

Legend: *1 – based on Spearman's rho Correlation; ns – P > 0.05; * – P < 0.05; ** – P < 0.01; *** – P < 0.001.*

Table 10 displays the relationship between the learners' academic performance, their perception, and teachers' perception. The results revealed that there was no significant relationship between the learners' perception and teachers' perception of the implementation of the school feeding program. Thus, the null hypothesis, which stated that no significant relationship exists between the learners' academic performance, their perception, and teachers' perception, was not rejected.

These findings contributed to the growing body of literature indicating that while school feeding programs are essential in addressing hunger and promoting attendance, their direct correlation with academic performance remains inconsistent and often statistically insignificant.

Numerous studies have acknowledged the multidimensional benefits of SFPs, particularly in enhancing learners' nutritional status, promoting regular school attendance, and fostering a supportive school environment. However, as highlighted in the study of Molla and Wolde (2023) in Addis Ababa, Ethiopia, even though students participating in SFPs attained significantly higher average academic scores than their non-participating counterparts, such results are not universally consistent. Taddese and Melaku (2022), in a related study conducted in Southern Ethiopia, found that SFPs indeed played a pivotal role in reducing dropout rates and absenteeism, yet improvements in academic performance remained marginal. This dichotomy suggests that while SFPs can create favorable conditions for learning by ensuring that children are present and physically nourished, their direct academic impacts are likely influenced by other mediating factors such as home environment, quality of instruction, and individual learner capacity.

In the Philippine context, similar findings have been documented. Dacalos (2020) reported that although the implementation of school feeding programs resulted in measurable improvements in students' Body Mass Index (BMI), the correlation between nutritional gains and academic performance was statistically negligible. This pattern highlights that academic success is not solely a function of physical well-being; rather, it is shaped by an intricate interplay of psychosocial, pedagogical, and environmental factors. Supporting this view, Akingbade and Fakoya (2018) stressed the importance of parental education, especially that of fathers in economically disadvantaged households, as a more consistent predictor of learners' academic achievement than participation in SFPs. This observation is critical in understanding that while nutrition provides the foundation for learning readiness, it does not automatically translate into higher academic performance without support from other domains of the learner's life.

Adding further nuance to this relationship, the study by Owino (2021) in Tanzania demonstrated that the positive effects of SFPs on academic performance were mostly indirect. The program's implementation led to higher test scores, increased enrollment, and reduced absenteeism, suggesting that the main benefits of SFPs may lie in their ability to promote school participation. Likewise, Gelli and Aurino (2019), in their research on take-home ration interventions in Burkina Faso, found that SFPs substantially increased school attendance and particularly enhanced girls' enrollment. These findings suggest that while academic improvements might result from SFPs, they are often the byproduct of increased instructional exposure and social motivation, rather than the direct result of improved nutrition alone.

In the Nigerian context, Akor and Ogbodo (2019) examined how the quality and consistency of meals impacted learners' academic success. Their study revealed that students who received nutritious, sufficient, and regularly provided meals showed better cognitive and academic outcomes. In contrast, inconsistent feeding schedules and meals lacking essential nutrients failed to yield comparable benefits. This study highlights that the mere presence of an SFP does not guarantee educational gains. The success of such programs is highly contingent upon their operational quality, including proper meal planning, logistics, and nutritional adequacy. Without these factors in place, learners may still experience hunger or poor cognitive function despite program participation.

These empirical insights are further contextualized through theoretical frameworks such as Maslow's Hierarchy of Needs. Maslow theorized that basic physiological needs—chief among them hunger—must be fulfilled before individuals can attend to higher-order needs, such as learning and self-actualization. While school feeding programs aim to satisfy this foundational tier, the theory also suggests that meeting physiological needs alone is insufficient. For learners to truly excel academically, they must also experience safety, love, belonging, esteem, and opportunities for cognitive engagement. Hence, while SFPs may address the physiological dimension, their influence is ultimately interdependent with other systemic educational factors. This was echoed in the findings of Akor and Ogbodo (2019), who noted that nutritional interventions must be accompanied by quality teaching, conducive learning environments, and psychosocial support to yield substantive academic outcomes.

Furthermore, the results of this study are consistent with local Philippine research, such as the investigation conducted at Holy Spirit

Elementary School in Quezon City. There, it was found that while learners and teachers perceived the SBFP positively—agreeing on its beneficial effects on hunger, energy levels, and motivation—no statistically significant correlation emerged between these perceptions and academic achievement. Similarly, an evaluation of the "Busog Lusog Talino" program in the Bicol region reinforced this observation. Although it successfully improved the nutritional status of learners, the program's academic impact, as measured through test scores and grades, did not show statistically significant changes. These examples underline the recurring theme that perception alone—no matter how favorable—is not a reliable predictor of academic performance.

This observed gap between positive perceptions and tangible academic outcomes may be attributed to several intervening variables. Learners may feel more energetic and focused after meals, yet without corresponding improvements in curriculum delivery, assessment systems, or family support, their performance metrics may remain stagnant. Teachers, on the other hand, may perceive improved classroom behavior or attentiveness among well-fed learners, but unless robust pedagogical interventions match this, these behavioral changes may not translate into measurable academic gains. Thus, perceptions—though valuable indicators of program acceptability—should not be mistaken for evidence of academic efficacy.

Socioeconomic Profile and the Perception of Learners and Teachers Significantly Predict the Academic Performance of the Learners

Table 11. *Variables[1] that Best Predict Learners' Academic Performance*

Indicator	*Unstandardized Coefficients*		*Standardized Coefficients*		
	B	*Std. Error*	*Beta*	*t*	*Sig.*
(Constant)	3.910	4.356		.898	.372
Age	-.226	.186	-.434	-1.216	.227
Sex	-.002	.088	-.002	-.024	.981
Occupation	.023	.028	.086	.851	.397
Number of siblings	-.191	.057	-.332	-3.353	.001**
Nutritional status	-.034	.147	-.037	-.232	.817
Learners' perception	.477	.320	.191	1.489	.140
Teachers' perception	-.480	1.075	-.045	-.446	.656
R = 0.401	R2 =0.161	F = 2.179	Sig. = 0.036*		

Legend: *1 – based on Linear Regression; ns – P > 0.05; * – P < 0.05; ** – P < 0.01; *** – P < 0.001*

Table 11 presents the variables that best predict learners' academic performance. The learners' academic performance was affected by the number of siblings with $\beta = -0.332$, $t = -3.353$, $p = 0.001$. This implied that among the variables, the number of siblings affects the learners' academic performance.

The R2 value of 0.161 implies that the demographic profile can explain 16.1% of the variance in the learners' academic performance in terms of the number of siblings. Hence, 83.9% of the learners' academic performance difference can be attributed to other variables not included in the regression model.

The regression analysis was significant, with an F-value of 2.179 and a p-value of 0.036. Therefore, the null hypothesis stating that "the learners' academic performance did not predict the demographic profile, learners' perception, and teachers' perception" was rejected.

Studies have shown that children from larger families may face challenges, such as receiving less individual attention from their parents, which can impact their academic performance. For instance, research by Feng (2021) found that an increase in sibling size is associated with lower educational outcomes, including fewer years of schooling and lower educational levels attained. Similarly, Adongo et al. (2022) reported that family size characteristics influence the academic performance of high school students, with smaller families having a more positive impact on academic outcomes.

According to a study by Adongo et al. (2022), a strong family support system has a positive influence on students' academic performance. However, in larger families, this support system may be stretched thin, leading to less effective academic assistance. This could explain why the number of siblings in your study was negatively correlated with academic performance, as children with more siblings may have less access to focused academic support from their parents.

Furthermore, the 2021 study by Meiling Guo (2021) found that academic performance is first positively but then negatively correlated with family size, identifying two children as the optimal number. Guo also observed that while siblings generally support learning through mechanisms like teaching younger siblings, there are nuanced effects, such as boys with younger sisters performing slightly worse on tests.

Adding further empirical evidence, Alamineisi and Sadeghi (2023) conducted a study in Tehran involving 493 female high school students. Their research confirmed that sibling size had a weak but negative relationship with academic performance. Although the effect was less pronounced, the results support the general notion that having more siblings may dilute the academic resources and attention a child receives.

Building on this study's findings, Otuu and Aguboshim (2023) investigated how sibling structure—specifically, birth order and age gap—influences academic performance. Their results revealed that elder siblings tend to perform better academically than their younger counterparts, reinforcing the idea that sibling-related factors significantly shape educational outcomes. Although their focus was on sibling structure rather than sheer number, their findings align with the current study's result that a higher number of siblings is negatively associated with academic performance. Both studies highlight the role of family composition in influencing a learner's academic success, suggesting that as the number of siblings increases, the distribution of parental support and educational resources may become less favorable for each individual child.

Further supporting the present study's conclusion that sibling number affects academic outcomes, Li, Cai, Zhong, and Liu (2021) conducted a large-scale meta-analysis in China comparing academic achievement between one-only children and those with siblings. Drawing from national assessment data, they found that only children generally outperformed their peers with siblings, with significant differences across subjects, grade levels, and socioeconomic contexts. This underscores the idea that a smaller sibling size—often associated with more focused parental attention and resource allocation—can be linked to better academic performance, aligning with the current study's finding that an increase in the number of siblings tends to have a negative effect on learners' academic success.

However, not all studies support the claim that sibling number affects academic performance. For instance, Walter (2020), in a study conducted in public day secondary schools in Kenya, found no significant relationship between the number of siblings and students' academic performance. Utilizing Bronfenbrenner's Ecological Systems Theory as the framework and analyzing data from 210 Form Four students, the study concluded that while parental income had a significant impact on academic outcomes, the number of siblings did not. These findings suggest that factors such as economic support and availability of learning materials may outweigh the influence of sibling structure in certain contexts. This contrast highlights the need to consider socio-cultural and economic factors when examining how family composition affects student performance.

From a theoretical perspective, these findings support the Ecological Systems Theory by Urie Bronfenbrenner (1979), which posits that the family environment plays a crucial role in a child's development, including academic performance. Larger families, with more siblings, may alter the family's support system, which in turn could influence a child's ability to succeed academically.

The significant impact of the number of siblings on academic performance, as shown in this study, underscores the importance of family dynamics in shaping educational outcomes. These findings were consistent with recent literature that indicates that children from larger families may face additional challenges in terms of academic support and resources, which can affect their performance in school.

Conclusions

Based on the findings, the School-Based Feeding Program has had a positive and significant impact on the nutritional status of the learners, as evidenced by the reduction in the percentage of learners classified as wasted or severely wasted. The program also garnered positive feedback from both learners and teachers, who reported improved school engagement, focus, and attendance. However, despite the program's positive impact on health and well-being, it was not directly linked to academic performance, as indicated by the lack of significant correlation between perceptions and academic outcomes.

The regression analysis highlighted the critical role that demographic factors, particularly the number of siblings, play in learners' academic performance. This suggests that family size may pose a challenge for learners' academic success, underscoring the need for comprehensive support that addresses both nutritional and academic needs. It is essential to note that while the SBFP addresses a fundamental health issue, additional academic interventions may be necessary to fully optimize its potential in improving academic outcomes.

Based on the findings of this study, it is recommended that the School-Based Feeding Program (SBFP) be continued and expanded to reach all learners in need of nutritional support, particularly those who are severely wasted or wasted. This expansion will enable a greater number of students to benefit from the improved cognitive and academic outcomes associated with proper nutrition. Schools should integrate nutritional education into the curriculum to raise awareness among students about the vital connection between nutrition, health, and academic success. This initiative will help encourage healthier eating habits both at school and at home, supporting students in making informed dietary choices. To better support students' holistic needs, teachers must receive ongoing professional development training on the importance of nutrition in enhancing student engagement and performance. Such training will enable educators to tailor their teaching strategies to meet the nutritional needs of undernourished learners, promoting a more supportive learning environment. School administrators should use the study's findings to advocate for the continued funding and support of feeding programs. Ensuring the sustainability and expansion of these programs, particularly in schools with high rates of malnutrition, will help provide long-term benefits to students' health and academic performance. Parental involvement is equally important. Parents should be provided with resources and workshops that emphasize the role of proper nutrition in academic success. By empowering parents with knowledge, they can make healthier food choices at home, reinforcing the connection between nutrition and academic achievement.

Collaboration with local communities is essential to sustain and strengthen feeding programs. Encouraging the participation of local

governments, businesses, and organizations in addressing student nutritional needs will create a more robust support system for school feeding initiatives. Future research should explore the long-term effects of school feeding programs on academic and health outcomes. Additionally, it should investigate other socioeconomic factors that may influence students' academic performance. This research will provide valuable insights that can help refine strategies and interventions for enhancing the success of school feeding programs. Policymakers are encouraged to integrate nutrition and education policies that support the holistic development of students. Ensuring that all learners have access to the necessary resources for both academic success and overall well-being will contribute to improved outcomes for students across the country.

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