

Extent of School Feeding Program Implementation and Its Relationship to Learners' Nutritional Status and Engagement

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Article Details:

Received: 12 February 2026

Revised: 22 April 2026

Accepted: 2 May 2026

Published: 20 May 2026

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Recommended Citation:

Balandra, H. L.B., Tortola, R. L. (2026). Extent of School Feeding Program Implementation and Its Relationship to Learners' Nutritional Status and Engagement. *The International Review of Multidisciplinary Research*. 1 (6), 72-85.

<https://doi.org/10.5281/zenodo.20301025>

Index Terms:

school-based feeding program, nutritional status, learner engagement, program implementation, elementary education

Abstract. This study aimed to determine the extent of school-based feeding program (SBFP) implementation and its relationship to learners' nutritional status and engagement in public elementary schools in Quezon IV District, Bukidnon. Specifically, it assessed key indicators of program implementation, including the adequacy of food served, frequency and consistency of feeding, quality and nutritional value of meals, and program management and stakeholder support. Learner outcomes were evaluated in terms of attendance, classroom participation, and academic performance. A descriptive-correlational research design was employed, and a total enumeration sampling technique was used to include all school heads, teachers, and SBFP coordinators from nine public elementary schools. Data were collected through structured questionnaires, program monitoring reports, and school records, and analyzed using weighted mean, frequency, percentage, and Pearson product-moment correlation coefficient. Findings revealed that the SBFP in the district is generally well-implemented, with meals provided consistently and of moderate to high nutritional quality. Adequate stakeholder support and efficient program management were also observed. Learners demonstrated improved nutritional status, regular attendance, higher classroom participation, and positive academic engagement. Statistical analysis further indicated a significant positive relationship between the extent of SBFP implementation and learners' nutritional status and engagement. The study concludes that the SBFP effectively enhances learner health and promotes active engagement in school activities. Recommendations include continued program monitoring, enhancement of meal quality, increased community involvement, and strategic capacity building for program implementers to sustain and maximize program outcomes.

Introduction

School feeding has been known to be the world-recognized important mechanism in dealing with malnutrition, enhancing school attendance, and increasing the learning achievements of school children. Actually, World Food Programme (2022) claimed that school feeding is among the biggest safety nets in the world as it covers 388 million children in 161 countries. Besides fighting hunger, the programs also work towards the Sustainable Development Goals (SDGs) especially in enhancing good health, quality education and inequalities. Therefore, school feeding programs can be regarded as the important interventions between nutrition and education.

Malnutrition still remains a significant education obstacle in the Philippine national context. School feeding is one of the identified interventions in the Philippine Plan of Action on Nutrition (PPAN) 2017-2022 to deal with the undernourishment in children. To address this issue, the Department of Education (DepEd) along with other agencies carries out the school-Based Feeding Program (SBFP) scheme to ameliorate the nutritional conditions of students, improve their classroom performance, and make them attend school regularly. Research has demonstrated that students who join the SBFP in the program gain better weight, attendance, and readiness to learn (Manalo, 2019). Therefore, the program makes a considerable contribution to the health and academic outcomes.

The SBFP is institutionalized in the Department of Education through its Health and Nutrition Program that focuses on rehabilitating the wasted and severely wasted learners in the public elementary schools. The program also involves provision of hot meals and milk within at least 120 days, both in terms of instant relief of hunger and long-term healthy nutrition (DepEd, 2020). In addition, DepEd underlines partnership with stakeholders, including parents, local government units, and community partners to facilitate the implementation of the program and make it more sustainable. This joint view contributes to the priority of responsibility of the program success.

At the regional, the Province of Bukidnon has been found to be one of the regions where malnutrition is highly prevalent. Philippine statistics Authority (2021) has reported that the rate of undernutrition in Northern Mindanao is higher than in other regions, and so school feeding programs are very relevant. Consistent with this, DepEd Bukidnon Division focuses on the SBFP as the intervention to boost health and education results of school children, especially in the rural communities where the food insecurity has remained.

Precisely, malnutrition is an urgent issue in the constituent elementary schools of Quezon, Bukidnon. Even though the SBFP is still being implemented, there are still obstacles, such as the lack of resources, logistical issues, and the degree of community engagement (DepEd Bukidnon Division, 2022). Although the positive results have been witnessed like increased classroom focus and weight improvement among the learners, the sustainability and reliability of delivering the programs remain an issue of concern.

SBFP has a direct influence on health and academic performance of learners. Students who are the beneficiaries of the program show improvement in their nutritional status and attendance in schools by their teachers and school heads. Nevertheless, problems related to the inconsistent provision of resources, the absence of facilities, and challenges in the observation of outcomes lead to the inability to be as effective as possible. Despite some reports of the advantages of the SBFP, there is scarcity of local empirical research exploring the level of its application and its relationship with the nutritional condition of learners and their level of involvement especially in Quezon District IV, Bukidnon. This is the localized assessment gap that gives rise to the necessity of systematic assessment that would show whether the program is implemented in an effective way and how much it contributes to nutritional and engagement outcomes among learners. This research project is thus expected to examine how far School-Based Feeding Program has been implemented in Quezon District IV, Bukidnon. In particular, it aims to identify the degree of the SBFP implementation, assess the nutritional status of learners, the degree of their engagement, and the strong correlation between the degree of program implementation and the nutritional status and level of engagement of learners. The study would use this investigation to deliver evidence-based information that can aid in solidifying the policy decisions and enhancing the implementation of the programs within the district.

Methodology

This study utilized a descriptive-correlational research design to determine the extent of the School-Based Feeding Program (SBFP) implementation and its relationship to learners' nutritional status and engagement. The descriptive design allows the researcher to systematically gather data regarding the current status of SBFP implementation, while the correlational component helps identify the strength and direction of the relationship between program implementation and student outcomes. According to Creswell (2014), descriptive-correlational studies are appropriate when the goal is to observe and describe existing conditions and examine relationships between variables without manipulating them.

The study was conducted **in** *District IV, Quezon, Bukidnon*, which consists of nine public elementary schools implementing the SBFP. These schools vary in size, location, and resources, serving diverse learner populations across both central and remote barangays. The district has been an active participant in DepEd's SBFP, providing daily nutritious meals to identified undernourished learners as part of the government's efforts to improve children's health, school attendance, and engagement. This setting offers an ideal environment for assessing how the SBFP is operationalized in different school contexts within the same district.

The respondents of this study include individuals who were directly involved in the implementation and monitoring of the School-Based Feeding Program (SBFP) in public elementary schools under Quezon IV District, Bukidnon. Specifically, the study targeted teachers and SBFP coordinators. Teachers were directly involved in observing learners during feeding sessions, recording attendance, and monitoring classroom engagement, thereby providing insights into the effects of SBFP on learners' nutritional status and participation in school activities. SBFP coordinators, on the other hand, were responsible for planning, organizing, and distributing meals to learners, as well as reporting progress and challenges in program implementation. The study covers nine (9) public elementary schools under Quezon IV District, and a total enumeration sampling technique was employed, ensuring that all teachers and SBFP coordinators from these schools were included as respondents. This approach guarantees comprehensive data collection and an accurate representation of the current SBFP implementation in the district.

To ensure appropriate participation, specific inclusion criteria were applied. These include teachers and SBFP coordinators who were currently assigned to the selected schools, those directly involved in the day-to-day operations and monitoring of the SBFP, and individuals who voluntarily consented to participate in the study. Conversely, exclusion criteria were observed to omit individuals who were not directly involved in the program, newly assigned personnel with less than one month of involvement, and those who were on leave or unavailable during data collection. Additionally, withdrawal criteria were established to respect participants' autonomy, allowing respondents to voluntarily withdraw at any point, failure to complete the required research instruments, or otherwise compromise the validity or reliability of the data collected. By applying these criteria, the study ensured that the data accurately reflected the experiences and perspectives of those most directly engaged in SBFP implementation while maintaining ethical standards and research integrity.

The study *employed a total enumeration sampling* procedure to ensure that all relevant respondents from the schools *were included*. A total of *nine (9) public elementary schools* under *Quezon IV District, Bukidnon* were covered, teacher, and SBFP coordinator involved in the program *were invited* to participate in the study. This sampling approach *allowed* the researcher to gather comprehensive and accurate data, as it *includes* the perspectives of all key personnel responsible for the implementation and monitoring of the School-Based Feeding Program in the district. By including all eligible respondents, the study *maximizes* the reliability and validity of the findings, providing a complete picture of the extent of SBFP implementation and its relationship to learners' nutritional status and engagement.

Data for this study were collected using a structured questionnaire, which was adapted from multiple sources to ensure content validity and alignment with the objectives of the research. The primary sources include the provisions of DepEd Order No. 39, s. 2017 (Operational Guidelines on the Implementation of SBFP), as well as previous studies on school feeding programs conducted by Bautista (2018), Garcia (2020), and Bundy et al. (2009). These sources guided the formulation of items related to program implementation, learners' nutritional status, and learner engagement, ensuring that the questionnaire accurately reflects the key indicators of the study.

The questionnaire was modified by the researcher to break down general statements into more specific items, allowing for precise measurement of the variables under investigation. This adaptation ensured that each item directly targets the study's indicators, facilitating a more accurate assessment of the extent of SBFP implementation and its relationship to learners' nutritional status and engagement.

The instrument was divided into two parts. Part I focused on the extent of School-Based Feeding Program implementation, covering four major indicators: adequacy of food served, frequency and consistency of feeding, quality and nutritional value of meals, and program management and stakeholder support. Respondents rated each item using a 4-point Likert scale, with 1 indicating "Very Low Extent" and 4 indicating "Very High Extent." Examples of items include evaluating whether the food portions are sufficient and appropriate for learners' age, whether feeding follows the schedule consistently, whether meals are nutritious and properly prepared, and whether teachers, parents, and the community actively support the program.

Part II assessed learners' engagement, focusing on three indicators: attendance, classroom participation, and academic performance. Items were similarly rated using a 4-point Likert scale, ranging from 1 ("Very Low Level") to 4 ("Very High Level"). Respondents evaluated aspects such as learners' regularity and punctuality in school, active participation in class discussions and group activities, cooperation with classmates, completion of academic tasks, and overall improvement in academic performance.

The structured questionnaire allowed a systematic data collection from teachers and SBFP coordinators, capturing both objective observations of program implementation and learners' engagement. The use of Likert-scale ratings facilitated quantifiable analysis, enabling the researcher to determine the extent of SBFP implementation and its relationship with learners' nutritional status and engagement. Moreover, the instrument was reviewed by experts to ensure clarity, relevance, and alignment with the study's objectives.

In scoring the responses of the teachers and SBFP Coordinators the following numerical values were assigned to each of the responses. The responses to the questionnaire *will be scored* using a *Likert scale*, where: 1 as Very Low Level and 4 is Very High Level.

Each statement was *assigned* with a numerical value corresponding to the respondent's answer. The scores for each section *were summed* and divided by the number of items to obtain the *weighted mean* for that section.

The weighted mean *indicates* the extent to which the SBFP is implemented and the perceived effects on learners' nutritional status and engagement. Higher scores *reflect* a stronger program implementation and more positive learner outcomes, while lower scores *will suggest* areas for improvement.

The researcher *secured* permission to conduct the study from the DepEd *Division of Bukidnon*, as well as from the respective school heads of the nine (9) public elementary schools under *Quezon IV District, Bukidnon*. After approval, the respondents *were oriented* regarding the purpose and significance of the study, and they *assured* that their participation *were voluntary* and their responses *remain confidential*.

The structured questionnaire was administered personally by the researcher and research assistants to teachers and SBFP coordinators. Respondents were given sufficient time to answer all items, and clarifications were provided to ensure accurate and complete responses. Completed questionnaires were collected within a specified period, coded, and prepared for statistical treatment.

The data gathering procedure followed ethical standards, including the protection of respondents' rights and adherence to the research objectives. The collected data were then tabulated, analyzed, and interpreted to determine the extent of SBFP implementation and its relationship to learners' nutritional status and engagement.

The data collected in this study were analyzed using descriptive and inferential statistical tools to address the research objectives systematically. Means and standard deviations were employed to describe the extent of School-Based Feeding Program (SBFP) implementation and the perceived effects on learners' nutritional status and engagement. The mean provides a measure of the central tendency, indicating the average response of the respondents for each item, while the standard deviation measures the variability or dispersion of responses, showing how consistent or varied the perceptions of respondents were. Weighted means were also computed to summarize responses across indicators, and these were interpreted using an established descriptive scale with corresponding qualifying statements (e.g., Very High Extent, High Extent, Low Extent, Very Low Extent), allowing for a clear understanding of the level of implementation and engagement. To determine the relationship between the extent of SBFP implementation and learners' nutritional status and engagement, Pearson's product-moment correlation coefficient was used. This inferential statistic measures the strength and direction of the linear relationship between two continuous variables, providing evidence on whether improvements in program implementation are associated with positive outcomes in learners' health and school engagement. Statistical significance was set at $p < 0.05$, indicating a 95% confidence level that observed relationships are not due to chance.

All computations were performed using SPSS (Statistical Package for the Social Sciences), which allowed for accurate calculation of descriptive and inferential statistics. This approach ensured that the analysis provides a comprehensive understanding of the current state of SBFP implementation and its effects on learners, thereby supporting evidence-based conclusions and recommendations.

The study *adhered* to ethical standards in conducting research involving human respondents. Permission *sought* from the DepEd Bukidnon Division, and from the respective school heads of the nine (9) public elementary schools under *Quezon IV District* before data collection began. Respondents *were informed* of the purpose and significance of the study, and they *were assured* that participation *were voluntary*.

All responses *were treated confidentially* and *were used solely* for research purposes. Respondents' identities *were remained anonymous* in the presentation of results, and no personal information *were disclosed*. During the administration of the questionnaires, respondents *were given* the opportunity to ask questions and clarify items to ensure that their responses *were accurate and honest*.

The researcher *ensured* that the study *will not cause any physical or psychological harm* to the respondents and *respects* their rights, dignity, and welfare throughout the entire research process.

Results and Discussion

The research instrument was also tested in terms of reliability before the actual data gathering to create internal consistency. The coefficient of Alpha of the 36-item questionnaire is 0.976, which shows that the 36-item questionnaire has very high internal consistency and therefore, the instrument is very reliable and consistent to measure the variables intended. Following the widely held norms, the Cronbach's Alpha value of greater than 0.90 is excellent, which implies that good items are well-constructed, have a clear understanding, and are closely related to each other in measuring SBFP implementation and engagement of learners. This justifies the reliability of the tool to be used in the analysis. It coincides with the strategy of Bautista (2018) and Garcia (2020), who state that valid measurement of program outcomes is guaranteed by effective instruments.

| Indicator | Mean | SD | Interpretation |
|--|-------------|--------------|--------------------|
| The food served is enough for the learners. | 3.64 | 0.663 | High Extent |
| All identified learners receive food during feeding. | 3.64 | 0.663 | High Extent |
| There is no shortage of food during feeding | 3.51 | 0.695 | High Extent |
| The food portion is appropriate for the learners' age. | 3.50 | 0.721 | High Extent |
| The food served satisfies learners' hunger. | 3.50 | 0.721 | High Extent |
| Overall | 3.56 | 0.601 | High Extent |

Table 1 Extent of School Feeding Program implementation in terms of adequacy of food served

Based on Table 1, the level of implementation of the School Feeding Program in reference to the adequacy of the foods being served is generally on a high scale with the overall mean being (Mean = 3.56, SD= 0.601). Indicators with the greatest mean were found to be the food served is sufficient to the learners (Mean = 3.64, SD = 0.663) and all identified learners were fed during feeding (Mean = 3.64, SD = 0.663). Conversely, the indicators with the lowest mean where the food portion is appropriate to the age of the learners (Mean = 3.50, SD = 0.721) and the food served satisfy the learners hunger (Mean = 3.50, SD = 0.721) though the indicators still fall within the high extent category. The other interesting indication is that of no food scarcity during feeding (Mean = 3.51, SD = 0.695).

This observation goes in line with the UNICEF (2022) report that proper food supply enhances the health of children, their learning capability, and their school attendance. On the same note, the World Food Programme (2021) reported that school meals are adequate to promote nutritional and academic performance. These findings also resonate with Owusu and Mensah (2024) and Dela Pena (2025), who in turn highlighted the significance of food adequacy in resolving the problem of hunger and stimulating the attendance and active participation in the classroom. Therefore, the SBFP in Quezon IV District is a good way of addressing the physiological needs of the learners, as per Maslows Hierarchy of Needs (1943).

It was found that the School Feeding Program implementation in regards to adequacy of food served was applied to a High Extent (Mean = 3.56, SD = 0.601). This is supported by the findings provided by the United Nations Children's Fund (2022) that stated that adequate food provision enhanced the health of children, learning ability, and school participation.

Likewise, the World Food Programme (2021) also found that adequate school meals are able to enhance the nutrition and academic performance of learners. This means that the feeding program is effective in dealing with the hunger of learners and meeting their physical and academic requirements. Further feeding of the learners should be continued to ensure that they remain healthy.

| Indicator | Mean | SD | Interpretation |
|---|-------------|--------------|--------------------|
| Learners receive meals daily during feeding period. | 3.51 | 0.650 | High Extent |
| Feeding is implemented continuously. | 3.46 | 0.676 | High Extent |
| Feeding is conducted regularly. | 3.32 | 0.634 | High Extent |
| Feeding follows the scheduled time. | 3.28 | 0.714 | High Extent |
| Overall | 3.39 | 0.537 | High Extent |

Table 2 Extent of School-Based Feeding Program implementation in terms of frequency and consistency of feeding

Table 2 shows that School Feeding Program is being practiced to high levels in regards to frequency and regularity of feeding and the overall mean (Mean = 3.39, SD = 0.537). The greatest mean was recorded on the indicator, Learners receive meals daily during feeding period (Mean = 3.51, SD = 0.650).

Conversely, the least mean was obtained in the case of Feeding after the scheduled time (Mean = 3.28, SD= 0.714). The other interesting indicators are also "Feeding is implemented continuously" (Mean = 3.46, SD = 0.676) and "Feeding is implemented regularly" (Mean = 3.32, SD = 0.634), which indicates the regular and permanent implementation of the program.

The School Feeding Program was introduced to a High Degree (Mean = 3.39, SD = 0.537). This compliments the Department of Education (2020), which stated that regular feeding enhances attendance and participation of learners. The World Food Programme (2022) maintains constant participation in schools and enhances the engagement of learners, which can be achieved through regular food programs. This means that regular feeding will motivate the learners to attend school and be active in the school activities.

The results are not alone as Okello and Kato (2023) and Nkrumah and Aboagye (2022) found that constant and regular feeding decreases the absenteeism rate, maintains the energy, and enhances the engagement. On the same note, the Department of Education (2020) focuses on the fact that when feeding is regularly provided, attendance and participation become available. This shows that consistency and consistency in program delivery enhances the engagement of the learners and their academic performance.

| Indicator | Mean | SD | Interpretation |
|--|-------------|-----------|-----------------------|
| Food is properly prepared. | 3.50 | 0.621 | High Extent |
| Meals include balanced food. | 3.42 | 0.596 | High Extent |
| Meals served are nutritious. | 3.38 | 0.578 | High Extent |
| Food served is clean and safe. | 3.32 | 0.563 | High Extent |
| Meals follow proper nutrition standards. | 3.28 | 0.582 | High Extent |
| Overall | 3.38 | 0.464 | High Extent |

Table 3 Extent of School-Based Feeding Program implementation in terms of Quality and Nutritional Value of Meals

Table 3 indicates that there is a high level of implementation of the School Feeding Program with regards to the quality and nutritional value of meals, which has an overall mean of (Mean = 3.38, SD = 0.464). One of the indicators, Food is prepared properly, has a high mean = 3.50 SD= 0.621.

By contrast, the lowest mean indicator is the one that has the lowest mean, namely Meals follow proper nutrition standards (Mean = 3.28, SD = 0.582). Other indicators that are significant are: Meals include balanced food (Mean = 3.42, SD = 0.596) and meal served is nutritious (Mean = 3.38, SD = 0.578) indicating the existence of meals that are nutritionally adequate to the learners.

The School Feeding Program was also Highly Implemented (Mean = 3.38, SD = 0.464). This observation is supported by the World Health Organization (2021) which observed that healthy nutrition boosts the academic achievements and academic performance of learners. This means that healthy meals promote academic performance and success among learners.

Such outcomes are in line with what Mensah et al. (2023) and Ramos and Bautista (2023) established, demonstrating that balanced and nutritious food enhances growth, physical performance, and classroom preparedness. Moreover, WHO (2021) and UNICEF (2023) highlight the importance of quality nutrition as it promotes a higher level of cognitive development and performance in school. Thus, meal preparation and nutritional sufficiency are significant towards enhancing the health and learning among learners.

| Indicator | Mean | SD | Interpretation |
|---|-------------|-----------|-----------------------|
| Teachers assist in feeding activities. | 3.38 | 0.578 | High Extent |
| The school monitors the feeding program. | 3.42 | 0.596 | High Extent |
| Parents support the feeding program. | 3.50 | 0.621 | High Extent |
| The school head supervises the feeding program. | 3.28 | 0.582 | High Extent |
| The community supports the feeding program. | 3.32 | 0.563 | High Extent |
| Overall | 3.38 | 0.464 | High Extent |

Table 4 Extent of School-Based Feeding Program implementation in terms of Program Management and Stakeholder Support

Table 4 shows that School Feeding Program is applied on a high level in regards to the program management and stakeholder support, and the overall mean of (Mean = 3.38, SD = 0.464). The largest mean was recorded in the support of the feeding program of the parents (Mean = 3.50, SD = 0.621).

Conversely, the minimum mean was obtained regarding the school head supervises the feeding program (Mean = 3.28, SD = 0.582). There are also other significant signals, namely, the school monitors the feeding program (Mean = 3.42, SD = 0.596) and Teachers assist in feeding activities (Mean = 3.38, SD = 0.578).

The usage of School Feeding Program was of High Extent (Mean = 3.38, SD = 0.464). This is supported by the Department of Education (2020), which claimed that the support of stakeholders was the guarantee of successful implementation of feeding programs. It is in line with Gelli et al. (2019) and Ramos and Bautista (2023), who stressed the importance of sustainability in terms of the proper management of the program and the active involvement of parents, teachers, and community stakeholders. The World Food Programme (2021) argues that the stakeholder engagement addresses accountability and program success. These results demonstrate that the support system surrounding SBFP enhances its implementation as well as the effect this has on the learners.

| BMI | f | % | HFA | f | % |
|-----------------|----------|----------|------------------|----------|----------|
| Obese | 20 | 0.91 | Tall | 78 | 3.42 |
| Normal | 1,158 | 52.83 | Normal | 1,174 | 51.45 |
| Wasted | 516 | 23.54 | Stunned | 516 | 22.61 |
| Severely Wasted | 498 | 22.72 | Severely Stunned | 514 | 22.52 |
| Total | 2,192 | 100.0 | Total | 2,282 | 100.0 |

Table 5 Nutritional status of the learners as indicated by Body Mass Index (BMI), and weight-for-age/height-for-age indicators

Table 5 shows the nutritional baseline of learners according to the Body Mass Index (BMI) and the height-for-age (HFA) data. Regarding BMI, most of the learners were found to be normal (f = 1,158, 52.83%), hence more than half of the learners

have a normal weight. Nevertheless, a high percentage of learners were identified to be wasted ($f = 516, 23.54$) and severely wasted ($f = 498, 22.72$). A very few learners were obese ($f = 20, 0.91$ percent), indicating that overnutrition is not a significant issue.

Considering height-for-age, the majority of learners were normal ($f = 1,174, 51.45\%$), implying that more than half of the learners possess the growth patterns that are within the range of normal values. However, a significant proportion of them were stunted ($f = 516, 22.61$) or severely stunted ($f = 514, 22.52$), suggesting chronic under numeracy and growth retards in a large proportion of the population. The number of tall learners was very limited ($f = 78, 3.42\%$), which is used to show that above-average growth is not common.

These findings indicated that a majority of the learners were found to be normal, though some were wasted and stunted. The World Health Organization (2022) also revealed that school feeding programs have a positive impact on the nutritional status of the learners, although a continuous intervention is required to address the issue of undernutrition.

This shows that, although SBFP has made a positive impact on the nutritional status of the learners, undernutrition is an issue. The results are in line with Reyes et al. (2019) and Mendoza and Cortez (2024) who found that weighted and growth measures improved after school feeding. They also agree with the UNICEF (2023) and WHO (2022), which highlight that school feeding interventions alleviate malnutrition. Hence, there is the need to have sustained and improved feeding programs that can completely overcome under-nutrition and delays in growth.

| Indicator | Mean | SD | Interpretation |
|--|------|-------|----------------|
| Learners attend school regularly. | 3.51 | 0.695 | High Extent |
| Learners arrive on time. | 3.32 | 0.634 | High Extent |
| Learners are present during class. | 3.27 | 0.736 | High Extent |
| Learners rarely absent from school. | 3.45 | 0.676 | High Extent |
| Learners attend classes the whole day. | 3.51 | 0.650 | High Extent |
| Overall | 3.41 | 0.533 | High Extent |

Table 6 Level of learners' engagement in terms of attendance

As it can be seen in Table 6, the engagement of learners in terms of attendance is mostly enforced with an overall mean of (Mean = 3.41, SD = 0.533). The largest mean values were noted to be those of "Learners attend school regularly" (Mean = 3.51, SD = 0.695) and "Learners attend classes the whole day" (Mean = 3.51, SD = 0.650).

Conversely, the smallest average was obtained with regards to "Learners are present during class" (Mean = 3.27, SD = 0.736). Other significant indicators are, Learners rarely absent of school (Mean = 3.45, SD = 0.676) and Learners arrive on time (Mean = 3.32, SD = 0.634).

The attendance of learners was applied on a High level (Mean = 3.41, SD = 0.533). This is in line with the World Food Programme (2022) study that determined feeding programs increase attendance. This means that feeding programs make the learners attend school on a regular basis.

Such results are consistent with those of Owusu et al. (2024), Okello and Kato (2023), who discovered that attendance is positively affected by schools feeding program since it lowers hunger adversity and disease-related absenteeism irrelevant to the present study. In line with this, the World food program (2022) observes that regular feeding promotes school attendance every day. This proves that the implementation of SBFP leads to improved attendance and punctuality, which are factors that promote continuity of learning.

| Indicator | Mean | SD | Interpretation |
|--|------|-------|----------------|
| Learners participate in group activities. | 3.50 | 0.621 | High Extent |
| Learners answer teacher's questions. | 3.42 | 0.596 | High Extent |
| Learners participate in class discussions. | 3.37 | 0.576 | High Extent |
| Learners show interest in lessons. | 3.32 | 0.563 | High Extent |
| Learners cooperate with classmates. | 3.28 | 0.582 | High Extent |
| Overall | 3.38 | 0.464 | High Extent |

Table 7 Level of learners' engagement in terms of classroom participation

Table 7 shows that the classroom participation by the learners is carried out at high level with the overall mean of (Mean = 3.38, SD = 0.464). The mean was the highest in the case of "Learners participate in group activities" (Mean = 3.50, SD = 0.621). On the other hand, the lowest mean was obtained in the case of the "Learners cooperate with classmates" (Mean = 3.28, SD = 0.582) although this mean also belongs to the high extent category.

Other significant ones are "Learners answer teacher questions" (Mean = 3.42, SD = 0.596), "Learners participate in classroom discussions" (Mean = 3.37, SD = 0.576), and "Learners demonstrate interest to lessons" (Mean = 3.32, SD = 0.563).

The classroom involvement of the learners was applied to a High degree (Mean = 3.38, SD = 0.464). In view of the United Nations Children Fund (2023), the classroom performance is enhanced with proper nutrition. This means that feeding programs enable the learners to be more active in the classroom.

Kebede et al. (2023) and Florencio et al. (2019) supported this and noted that students who eat regular and healthy meals are more focused, engage in discussions, and cooperate. Nutrition empowers the learners to be active in terms of thinking and interacting with others within the classroom.

| Indicator | Mean | SD | Interpretation |
|--|-------------|--------------|--------------------|
| Learners' complete academic tasks on time. | 3.42 | 0.596 | High Extent |
| Learners perform well in class activities. | 3.38 | 0.578 | High Extent |
| Learners achieve satisfactory academic grades. | 3.35 | 0.563 | High Extent |
| Learners show improvement in academic performance. | 3.32 | 0.582 | High Extent |
| Learners actively participate in academic tasks. | 3.28 | 0.621 | High Extent |
| Overall | 3.35 | 0.488 | High Extent |

Table 8. Level of Learners' Engagement in Terms of Academic Performance

As seen in Table 8, the level of engagement of learners in terms of academic performance is enforced to the high degree and its average is 3.35 (SD = 0.488). It means that learners exhibit the proactive attitude and good performance concerning their academic activities. The highest of the indicators was the one whereby; Learners complete academic tasks on time (Mean = 3.42, SD = 0.596) indicating that the learners are responsible and committed to achieving their academic tasks. Conversely, the smallest mean was reported in terms of "Learners actively engage in academic activities" (Mean = 3.28, SD = 0.621) but still, it is considered to be of a high extent. Other pointers like, L learners who are registered have good grades in their classes (Mean = 3.38, SD = 0.578) and L learners who are registered have satisfactory grades in their academic works (Mean = 3.35, SD = 0.563) show that the learners have good academic status.

Moreover, the phenomenon that demonstrates the positive academic progress of learners is the fact that the academic performance of learners increases (Mean = 3.32, SD = 0.582). This supports the results of Addae and Boateng (2025) and Wang et al. (2022), who established that feeding programs have a positive effect on cognitive functioning, the number of tasks completed, and academic performance. Healthy eating makes learners physically and mentally fit to learn resulting in high academic performance. In general, the results show that the learners are actually academically engaged and show satisfactory academic performance which can be contributed with the help of the school feeding program.

| Variable | r | p-value | Interpretation |
|--|-------------|-------------|--------------------|
| Adequacy of Food Served | .529 | .000 | Significant |
| Frequency and Consistency of Feeding | .551 | .000 | Significant |
| Quality and Nutritional Value of Meals | .636 | .000 | Significant |
| Program Management and Stakeholder Support | .498 | .000 | Significant |
| Overall | .676 | .000 | Significant |

Table 9 Test of Significant Relationship between the Extent of School-Based Feeding Program Implementation and the Learners' Nutritional Status

Table 9 reflects the high degree of correlation between the level of implementation of School Feeding Program (SFP) and the nutritional status of learners. Namely, the most significant connection with the nutritional status of learners can be identified with the indicator Quality and Nutritional Value of Meals (r = 0.636, p-value = 0.000), which helps understand that well-prepared, balanced, and nutritious meals are the key factor in influencing the health outcomes of learners. Other variables, including "Frequency and Consistency of Feeding" (r = 0.551, p-value = 0.000) and "Adequacy of Food Served" (r = 0.529, p-value = 0.000) are also significantly positively related, and this fact indicates that regular and sufficient provision of food has a value in relation to the nutrition of learners.

Moreover, "Program Management and Stakeholder Support" (r = 0.498, p-value = 0.000) shows that there is a good correlation. Which captures the significance of good program management and participation of teachers, parents, and community. All in all, the sum of SFP implementation indicators demonstrates a close and a significant correlation with the nutritional status of learners (r = 0.676, p-value = 0.000). This proves that a well-coordinated and well-adopted feeding program has a positive influence on the health and development of learners. Hence, the null hypothesis is disallowed.

The implementation of the feeding programs and nutritional status had a significant relationship. This is in line with the United Nations Children's Fund (2022) that reported that feeding programs enhance nutrition. This means that proper feeding programs enhance the health of the learners.

That is in line with the references of Reyes et al. (2019), Ulep and Borja (2018), and UNICEF (2022), which all confirm that well-thought, regular, and balanced nutrition feeding initiatives have a profound positive impact on the physical health of learners. Such results highlight the fact that effective SBFP is the key to enhancing nutritional performance, and starting the practice in a systematic manner is significant.

| Variable | r | p-value | Interpretation |
|--|-------------|-------------|--------------------|
| Learners' Engagement in Terms of Attendance | .508 | .000 | Significant |
| Learners' Engagement in Terms of Classroom Participation | .578 | .000 | Significant |
| Overall | .593 | .000 | Significant |

Table 10 Test of significant relationship between the extent of School-Based Feeding Program implementation and the learners' engagement

Table 10 demonstrates that there is a strong association between the level of implementation of School Feeding Program (SFP) and the engagement of learners. In particular, the strongest relationship can be observed in such terms as Learning Engagement in Terms of Classroom Participation ($r = 0.578$, $p\text{-value} = 0.000$) this fact means that the properly organized feeding program has a positive impact on the active involvement of learners in classroom activities, including the process of answering questions, discussing the material, and cooperating with other students. Likewise, the relationships between Learners and Engagement in Terms of attendance ($r = 0.508$, $p\text{-value} = 0.000$) also indicate a strong and significant relationship ($r = 0.593$, $p\text{-value} = 0.000$), indicating that the efficient application of the School Feeding Program leads to an increase in both the attendance and classroom attendance of learners. As such, the null hypothesis is dismissed.

A strong correlation existed between the feeding program and the engagement of the learners. This reinforces the World Food Programme (2021) that discovered that feeding programs enhance the engagement of learners. This means that the attendance and participation is enhanced by feeding programs.

Such findings are parallel to Bundy et al. (2019), Kristjansson et al. (2016), and WFP (2021), where the researchers indicated that school feeding schemes promote regular attendance, classroom participation, and academic interaction. Fit nutrition, seamless program implementation and support by the stakeholders improves the learner interaction in both cognitive and social levels.

This research shows that the school-Based Feeding Program (SBFP) in Quezon IV District, Bukidnon is well implemented on all indicators, such as food adequacy, food feeding, nutritional quality, and support by stakeholders. Accordingly, the implementation of SBFP has a positive impact on the nutritional condition of learners, their attendance, engagement in the classroom, and academic success. It is well supported by the international and local literature, such as Bundy et al. (2019), Reyes et al. (2019), Ramos and Bautista (2023), and UNICEF (2022, 2023). On the whole, the paper is able to establish that school feeding programs do not only address malnutrition but also contribute to the increased learner interaction and academic performance, which is why this study relates to the Hierarchy of Needs theory by Maslow and the Ecological Systems Theory created by Bronfenbrenner (1979) that stresses the role of the physiological needs and the impact of various systems on the development of a child.

In particular, the SBFP was applied to a high degree among all the indicators measured, which proves its efficiency in meeting the nutritional needs of learners and the involvement in school life. As an example, the sufficiency of food served was rated at the high level, and learners never encountered the lack of meals and all the identified learners were under the program. This observation follows the works of Owusu and Mensah (2024) and Dela Pena (2025), which underscored that proper food supply curbs the hunger and increases the concentration, attendance, and participation. Further, with regard to frequency and consistency, the learners were fed regularly and constantly during the feeding duration, which is consistent with what Okello and Kato (2023) and Nkrumah and Aboagye (2022) found that constant feeding maintains energy levels, reduces absenteeism, and enhances engagement. On the same note, quality and nutritional value of food was introduced at a high level and this offered balanced and well-cooked and safe food. This helps the research of Mensah et al. (2023) and Ramos and Bautista (2023), which emphasized that healthy food improves development, energy, and cognitive capacity to study. Moreover, program management and stakeholder support were considered good, as parents, teachers, school heads, and the community actively participated in the effective program implementation, which is why Gelli et al. (2019) note that the multisectoral collaboration is a crucial factor in the success of the feeding program.

Also, these implementation outcomes were projected on the outcomes of learners. The majority of learners were considered as normal with respect to BMI and height-for-age, but a considerable number were either wasted or stunted and this means that as much as the program helps in improving nutrition, it has to be implemented continuously to deal with under nutrition fully. The learner engagement was also high in the areas of attendance, classroom engagement, and achievement, as the learners were found to attend school regularly, engage in discussions and group activities, deliver academic work on schedule, and show consistent improvement in academic performance. These results are in line with the findings by Reyes et al. (2019), Ulep and Borja (2018), and Addae and Boateng (2025), which concluded that feeding programs have a positive effect on attendance, classroom participation, and academic achievement. In addition, the correlation sources supported a strong correlation between the degree of SBFP implementation and the nutritional condition of learners ($r = 0.676$, $p = 0.000$) and engagement ($r = 0.593$, $p = 0.000$), which states that feeding programs actually implemented with a high degree of success have a meaningful impact on both the physical health and educational results of learners.

Lastly, the findings of this research can be directly connected to the theoretical framework that relies on Maslow's Theory of Hierarchy of Needs (1943) or the Ecological Systems Theory (1979) by Bronfenbrenner. The Maslow theory reiterates that physiological needs like food have to be fulfilled before learners can undertake other activities of higher needs like academic mobilization and socialization. Thus, the basic needs of learners are met with the help of SBFP by providing appropriate, nutritious meals that allow them to be focused, active, and academic. The theory outlined by Bronfenbrenner is a complement to this one as it emphasizes the influence of environmental systems on the development of a child. In particular, school is used as a critical microsystem, in terms of which learners also communicate daily with teachers and peers, and same program implementation and sustainability is promoted through mesosystem of collaboration of parents, local government units and stakeholders. The stakeholder support rates recorded in the current study prove how environmental systems support the efficiency of feeding programs. Summing up, the empirical data presented in the study supports the framework and indicates that addressing the nutritional needs of learners in a supportive school and community setting results in a better nutritional condition and increased engagement, which, in turn, proves the relevance of the interventions of a holistic child development.

Conclusion and Recommendations

The results indicated that the level of implementation of the School Feeding Program is mostly high in all the indicators that are measured. Students always had sufficient food proportions, feeding of students was done regularly and based on schedules, meals were wholesome and well-cooked and there was also good management of programmes and support by the stakeholders. In particular, the largest mean scores were found in the indicators that dealt with adequacy of food served and parental support and indicated that the learners were getting enough food and that parents and school staff were actively involved in the success of the program. This outcome can be compared to the findings of other recent reports, including the World Food Programme (2022) and Global Child Nutrition Foundation (2022), which highlighted that the successful school feeding programs require the active involvement of the community and proper management.

Nutritional analysis of the learners revealed that the learners were categorized as normal with most of them being of normal BMI and height-for-age indices, which indicates that most children were in healthy nutritional condition. A large percentage, however, were wasted, drastically wasted, stunted or grossly stunted, which is an indicator of long-term undernutrition in certain groups of learners. It is consistent with the results of a study by UNICEF Philippines (2024), which stated that the problem of chronic undernutrition is still observed even in the population of school-aged children attending feeding programs.

Regarding engagement of the learners, the findings showed that the learners had a high degree of participation in school affairs including regular attendance, punctuality, classroom participation, and academic performance. The most frequent mean scores were recorded at the indicators of regular attendance and performing academic tasks punctually, which argues that learners were interested in their school work and were determined to learn. The findings are in line with those of World Health Organization (2021) that found that proper nutrition has a positive effect on learner engagement and cognitive performance.

In addition, the research found that there existed a strong positive correlation between the level of SFP implementation and nutritional status and engagement of the learners. Attributes like quality and nutritional content of food, frequency and regularity of feeding, and support by the stakeholders were closely linked to better nutritional performance and increased participation in school activities. These claims are backed by the recent studies by Bundy et al. (2020) and Wang et al. (2022) that point out that properly organized school feeding programs not only positively influence the health outcomes but also improve the academic participation and performance of the learners.

Conclusively based on the study findings, it can be concluded that the School Feeding Program in the public elementary schools within Quezon IV District is well running, and it has higher qualities of adequacy, frequency, nutrition quality and

support by the stake holders. Majority of the learners are in good nutritional health, but a big percentage of the learners still experience under nutritional conditions, which can also be taken as a point where the program can offer further intervention. There is also a high attendance, classroom and academic involvement by the learners indicating that feeding program has a positive impact on school involvement. Above all, the paper summarizes that the implementation of the School Feeding Program has a significant positive correlation to the nutritional status of learners and their involvement, which proves that a well-organized and appropriately implemented feeding program plays a valuable role in improving health and learning outcomes

Resting on the research results, the following research recommendations can be offered:

For Learners. Being the major beneficiaries of the SBFP, it is the duty of the learners to ensure that they always take part in the program fully enjoying the healthy meals offered. This will assist in improving their nutritional status, attendance, classroom-based participation, and academic performance. The constant participation will make sure they reap maximum benefits of the program.

For Teachers. In order to maximize the effectiveness of the program, the teachers are expected to be vigilant about the interest of learners during the feeding or classroom setting and give timely feedback to improve this interest. It is also advised that they should incorporate nutrition sensitive methods of instruction in their day-to-day lessons so as to ensure that the learning and well-being of learners are enhanced.

For Schools. Enhanced management of programs can be achieved by the school administrators and the SBFP coordinators to deal with difficulties in implementation, provide correct scheduling, and check the quality of meals and distribution. The community stakeholders and parents should continue to collaborate so as to maximize the impact and sustainability of the programs.

For Municipality of Quezon. The local leaders, the policy makers, as well as community stakeholders are urged to facilitate other complementary activities like community nutrition programs, food security programs, parent involvement programs etc. These will strengthen the well-being and engagement of the learners besides making the SBFP even more effective in the municipality.

For Province of Bukidnon. The inter-agency collaboration and community involvement should be further promoted by provincial agencies, nutrition councils and partner organizations. The reinforcement of provincial support will make the feeding programs more sustainable and have a wider influence that will benefit learners in various municipalities.

In the case of Department of Education (DepEd). As the main implementer, DepEd is advised to review and enhance the current operational guidelines, best practices of program management, and capacity building of the school employees. These measures will make sure that implementation of SBFP is in line with nutritional and educational requirements of learners.

For Valencia Colleges. As an institution of higher learning, Valencia Colleges can take initiative in researching, extending and community outreach in matters of nutrition and school-based feeding programs. The institution can also cooperate with local schools and government units by offering technical support, student volunteers and research-based interventions to improve the program implementation. Moreover, incorporating nutrition education, community involvement, and community health awareness into academic institutions would assist in producing the future professionals who are sensitive to the health and learning requirements of the learners.

For Future Researchers. It is hoped that researchers might develop this study by adding more variables, longitudinal research, or extending research to other districts and regions. This will offer further knowledge on the efficacy and sustainability of school-based nutrition programs and the outcomes they have on learners.

Acknowledgement

The researcher would like to express her deepest gratitude to all the individuals who contributed to the successful completion of this study:

To Dr. Riches L. Tortola, adviser, for her invaluable guidance, insightful comments, professional expertise, and unwavering support throughout the conduct of this study. Her patience, encouragement, and dedication greatly helped the researcher refine and complete this work.

To Dr. Lelanie T. Combate, District Supervisor of Quezon IV, for her support, encouragement, and approval to conduct the study within the district. Her leadership and commitment to educational development significantly contributed to the realization of this research.

To the distinguished members of the panel of examiners: Dr. Susan S. Olana, chairman; Dr. Leo Jade B. Matalubos, Dr. Ruel C. Duran, and PROF. Flordeliza A. Abecia, members. Their constructive criticisms, valuable suggestions, and scholarly insights greatly enhanced the quality and rigor of this study.

To Dr. Isaias S. Sealza, Dean of the Graduate Studies, for his support and approval of this academic endeavor.

To the school administrators, teachers, parents, and learners who willingly participated in this study. Their cooperation and honest responses made this research possible.

To the researcher's family and loved ones for their constant encouragement, understanding, prayers, and moral support throughout this academic journey.

To God Almighty, for His guidance, wisdom, strength, and countless blessings. All glory and honor are humbly offered.

Funding

This research received no external funding from any public, commercial, or not-for-profit funding agency, and no organization provided financial support for the conduct of the study, authorship, or publication of this article.

Competing Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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Appendices

No appendices are attached to this study.