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Impact of Strategic and Innovative Implementation of School-Based Feeding Program (SBFP) on the Nutritional Status and Academic Performance of Grade 1 Learner-Beneficiaries: An Action Research

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Abstract

This study examined the impact of the Strategic and Innovative School-Based Feeding Program through Project FeEDING on the nutritional status and academic performance of severely wasted and underperforming Grade 1 learner-beneficiaries at Dasmariñas Elementary School during School Year 2024-2025. Although no formal theoretical framework was specified, the study used an intervention-based conceptual structure linking learner characteristics, program implementation, and expected nutritional and academic outcomes. Documentary analysis and quantitative methods were employed using the pre- and post-feeding Nutritional Status Reports and the first- and second-quarter general averages recorded in School Form 10 of seventeen (17) Grade 1 learner-beneficiaries. Frequency, percentage, standard deviation, and a t-test for correlated samples were used for data analysis. Results showed that all learners were severely wasted before the intervention, with a mean BMI of 10.535, which increased to 13.582 after implementation. The difference was highly significant ($p = 0.0001$). Academic performance also increased from a mean general average of 81.65 to 83.76, with a highly significant difference ($p = 0.0006$), although the study's conclusion characterized the program's effect on academic performance as minimal. The study concluded that Project FeEDING substantially improved learners' nutritional status and recommended intensifying the program through collaboration with Gulayan sa Paaralan, health and nutrition programs, parents, and other stakeholders, together with continuous nutrition and health education and further research. The study supports SDG 2 - Zero Hunger, SDG 3 - Good Health and Well-Being, SDG 4 - Quality Education, and SDG 17 - Partnerships for the Goals. Its sustainability contribution lies in integrating nutrition, education, school health, gardening, parental participation, and stakeholder collaboration to strengthen sustained school- and community-based responses to learner malnutrition and educational needs.

Keywords: Academic Performance, Body Mass Index (BMI), Grade 1 Learner-Beneficiaries, Gulayan sa Paaralan, Nutritional Status, Project Feeding, School-Based Feeding Program, Stakeholder Collaboration

1. Introduction

Good health and nutrition are essential foundations of learning, child development, and long-term well-being. Adequate nutrition supports learners' growth, participation, resilience, and educational development, while poor nutritional status can negatively affect their capacity to learn and perform in school (UNESCO, 2024). UNICEF (2024) likewise emphasized that good nutrition is fundamental to child survival and development because well-nourished children are better able to grow, learn, participate in their communities, and withstand crises. Schools play an important role in addressing malnutrition among learners through nutrition-focused programs and interventions. In the Philippines, the Department of Education has strengthened the implementation of the School-Based Feeding Program (SBFP) to improve the nutritional status of undernourished public elementary school learners. Within this context, the present study examined the impact of the Strategic and Innovative School-Based Feeding Program through Project FeEDING (Feeding Program to improve Learner's Engagement/Development/Involvement and Nutritional status in partnership with Gulayan sa Paaralan) on the nutritional status and academic performance of undernourished and underperforming Grade 1 learner-beneficiaries. The intervention involved collaboration among school personnel, parents, teacher-advisers, and other stakeholders and assessed changes in learners' Body Mass Index (BMI) and academic performance before and after implementation.

Nutrition is closely associated with children's physical development, learning capacity, participation, and educational outcomes. Good nutrition enables children to grow, learn, and participate more effectively in their communities, while also strengthening their resilience against illness and other challenges (UNESCO, 2024). According to UNICEF (2024), nutrition serves as the foundation of child survival and development and can generate broader social and economic benefits. Recognizing this relationship, schools serve as important settings for interventions aimed at improving learners' health and nutrition. Under the MATAGTAG Curriculum, the Department of Education, through DepEd Order No. 036, s. 2024, titled "Lakas Gatas Milk Campaign," and in adherence to the Education 2030 Agenda and Republic Act No. 11037, or the "Masustansyang Pagkain Para sa Batang Pilipino Act," continued efforts to strengthen the School-Based Feeding Program. The program is intended to provide nourishment to undernourished learners, support their growth and development, strengthen their immune systems, and promote appropriate nutrition and health practices. The present study focused on undernourished and underperforming Grade 1 learner-beneficiaries and examined whether a strategic and innovative implementation of SBFP through Project FeEDING could improve both nutritional status and academic performance. The intervention integrated feeding, health and nutrition practices, academic support, Gulayan sa Paaralan, and stakeholder participation to address the interconnected nutritional and educational needs of the identified learners.

Existing studies support the contribution of school-based feeding programs to improved nutritional status, attendance, health practices, and academic outcomes. In 2015, the Philippines Institute of Developmental Studies, as mentioned in the study of Yamaguchi & Takagi (2018), evaluated the SBFP and reported that 73% of undernourished beneficiaries attained normal nutritional status after 120 feeding days, while school attendance reached 98%. Improvements in health-related behaviors, including handwashing, tooth brushing, and personal grooming, were also observed. Similarly, the study conducted by Cagape (2017) revealed that 89% of identified severely wasted and wasted pupils improved their nutritional status, while classroom attendance ranged from 85% to 100%. These findings suggest that incorporating feeding programs into schools may contribute to improved health, nutrition behaviors, and classroom attendance. The findings of Agujar et al. (2020) also showed improvements in both nutritional and academic indicators, with eight or 16% of the respondents improving their BMI classification from severely wasted to wasted and 37 or 74% improving their general average by one to five points. Likewise, the study of Lago and Quirap (2022) revealed a significant difference in respondents' nutritional status between the pre-feeding and post-feeding periods and in their academic performance between the first and third grading periods. These findings indicate that sustained school-based feeding interventions may contribute to positive health and educational outcomes. The result of the study conducted by Bilbar (2020) further revealed a significant relationship between children's nutritional status and feeding programs that provide adequate nutritious food, calories, and nutrients. According to Adelman et al. (2008), a School Feeding Program can provide children with a balanced diet that may increase their attention span, while adequate nutrition contributes to academic achievement and holistic child development and may influence cognitive development. Evidence from Rivera (2017) also showed that after 100 to 120 feeding days, 78.29% of severely wasted and wasted beneficiaries attained normal nutritional status, while attendance improved to at least 98.86%. The study further identified a significant difference between beneficiaries' nutritional status before and after feeding activities. This was supported by Porqueriño (2023), which reported a significant difference between the grades of malnourished pupils before and after program implementation. Collectively, these findings emphasize that nutritional status can influence learners' health, classroom participation, learning potential, and academic performance.

Despite government efforts to improve the nutritional status of undernourished learners, challenges in program reach and child malnutrition remain evident. The 2022 Annual Poverty Indicator reported that only 23% of

children benefited from school-based feeding programs. The Philippine Plan of Action for Nutrition (PPAN) 2023-2028 further reflected the continuing nutritional challenges in the country, with 26.6% of Filipino children under five identified as stunted and 5.5% experiencing wasting. At the school level, the Nutritional Status Report of Dasmariñas Elementary School for School Year 2024-2025 showed that among 459 SBFP beneficiaries from Kinder to Grade 6, 171 or 37.25% were classified as severely wasted. This situation demonstrated the need for a more focused intervention addressing the nutritional needs of vulnerable learners while also considering their educational performance. In response, the school developed Project FeEDING as a strategic and innovative implementation of the SBFP. The intervention focused particularly on severely wasted Grade 1 learner-beneficiaries with very low academic performance and involved collaboration among the School Head, SBFP Coordinator, Gulayan sa Paaralan Coordinator, Health and Nutrition Coordinator, WINS Coordinator, teacher-advisers, parents, and other stakeholders.

The study did not specify a formal theoretical framework but presented an intervention-based conceptual structure linking learner characteristics, program implementation, and expected outcomes. The identified severely wasted Grade 1 learners with very low academic performance constituted the target group, while the strategic and innovative implementation of the School-Based Feeding Program through Project FeEDING served as the intervention. The intended outcomes were improved nutritional status and increased academic performance. Project FeEDING was planned, designed, proposed, and implemented collaboratively by the School Head and SBFP Coordinator together with the Gulayan sa Paaralan Coordinator, Health and Nutrition Coordinator, WINS Coordinator, teacher-advisers, parents, and other stakeholders. Learners were identified using the School Year 2024-2025 nutritional status results and their first-quarter general averages reflected in School Form 10. The intervention incorporated collaborative planning, Focus Group Discussion (FGD), monitoring, nutrition and health practices, feeding activities, and instructional support. School personnel responsible for health and nutrition ensured that appropriate nutrition and health practices were provided, while teacher-advisers, parents, and other stakeholders supported the learners' teaching and learning experiences. After the intervention, post-nutritional status data and second-quarter general averages were used to determine whether improvements occurred in the nutritional status and academic performance of Grade 1 learner-beneficiaries.

Although previous studies demonstrated positive outcomes associated with school-based feeding programs, persistent malnutrition among learners remained evident at both national and school levels. The high proportion of severely wasted SBFP beneficiaries at Dasmariñas Elementary School indicated the need for a focused and collaborative intervention that addressed nutritional concerns together with poor academic performance. The study therefore sought to determine the impact of the Strategic and Innovative School-Based Feeding Program through Project FeEDING on Grade 1 learner-beneficiaries during School Year 2024-2025. Specifically, it examined learners' nutritional status before and after implementation using BMI, their academic performance before and after implementation using first- and second-quarter general averages, and whether significant differences existed between the pre- and post-intervention nutritional and academic results. Correspondingly, the study tested the null hypotheses that there was no significant difference in the nutritional status of Grade 1 learner-beneficiaries before and after implementation of the Strategic and Innovative School-Based Feeding Program and that there was no significant difference in their academic performance before and after implementation. Through these comparisons, the study aimed to determine whether Project FeEDING could serve as an intervention for improving the health, nutritional condition, and academic performance of severely wasted and underperforming Grade 1 learners.

The study is naturally aligned with SDG 2 - Zero Hunger because it addresses undernutrition and severe wasting among elementary learners through a school-based feeding intervention. It also supports SDG 3 - Good Health and Well-Being by promoting improved nutritional status, proper health practices, and learner well-being. The study further contributes to SDG 4 - Quality Education because it examines the relationship between improved nutrition and learners' academic performance and supports conditions that can enable children to participate effectively in learning. Its collaborative implementation also reflects SDG 17 - Partnerships for the Goals, as Project FeEDING involves coordinated participation among school administrators, program coordinators, teachers, parents, and other stakeholders in addressing learners' nutritional and educational needs.

The study contributes primarily to public health, educational, institutional, and community sustainability by integrating nutrition interventions with educational support. Improving the nutritional status of young learners can support their health, development, classroom participation, and capacity to benefit from education, while examining academic performance alongside nutrition recognizes the interconnected nature of health and learning. At the institutional level, Project FeEDING strengthens coordinated school-based responses by involving personnel responsible for feeding, health, nutrition, sanitation, school gardening, and instruction. Its collaboration with parents and other stakeholders also supports community participation and shared responsibility for learner well-being. Through this multidisciplinary approach, the study provides a school-based strategy for sustaining efforts to address malnutrition while promoting healthier and more academically capable learners.

2. Material and methods

2.1 Research Design

The study used documentary analysis and quantitative methods to assess changes in the nutritional status and academic performance of Grade 1 learner-beneficiaries before and after the implementation of Project FeEDING. Pre-feeding and post-feeding records were compared to determine whether significant improvements occurred following the intervention.

2.2 Locale of the Study

The study was conducted at Dasmariñas Elementary School during School Year 2024-2025, where the Strategic and Innovative School-Based Feeding Program through Project FeEDING was implemented among identified Grade 1 learner-SBFP beneficiaries.

2.3 Respondents of the Study

The respondents were seventeen (17) severely wasted and underperformed Grade 1 learner-SBFP beneficiaries of Dasmariñas Elementary School during School Year 2024-2025. Their nutritional status and academic performance records served as the primary sources of data for evaluating the intervention.

2.4 Sample and Sampling Procedure

The seventeen (17) Grade 1 learner-beneficiaries were identified based on the results of the Nutritional Status Report and their 1st Quarter General Average recorded in School Form 10 (SF10). Learners identified as severely wasted and having low academic performance were included as beneficiaries and respondents of Project FeEDING. No specific sampling technique was identified in the source material.

2.5 Research Instrument

The study utilized documentary records consisting of the pre-feeding and post-feeding Nutritional Status Report for School Year 2024-2025 obtained from the SBFP Coordinator and the 1st Quarter and 2nd Quarter General Average recorded in School Form 10 (SF10) obtained from the Teacher-Advisers. These records were examined through documentary analysis to determine changes in the respondents' nutritional status and academic performance.

2.6 Data Gathering Procedure

Data gathering began with a pre-feeding documentary analysis of the respondents' nutritional status at the beginning of School Year 2024-2025 and their 1st Quarter General Average from School Form 10 (SF10). Based on these records, severely wasted Grade 1 learner-SBFP beneficiaries with low academic performance were identified and included in the Strategic and Innovative School-Based Feeding Program through Project FeEDING. After a series of Project FeEDING sessions, a post-feeding documentary analysis was conducted using the updated Nutritional Status Report and the respondents' 2nd Quarter General Average to determine changes or improvements after the intervention.

2.7 Data Analysis Techniques

The gathered data were analyzed using frequency, percentage, standard deviation, and t-test to determine the nutritional status and academic performance of the Grade 1 learner-beneficiaries before and after Project FeEDING. The t-test for correlated samples was specifically used to determine whether the differences between the mean scores before and after the intervention were statistically significant.

3. Results and Discussion

3.1 Nutritional Status of Grade 1 Learner-Beneficiaries

3.1.1 Nutritional Status Before the School-Based Feeding Intervention

Before the implementation of the Strategic and Innovative School-Based Feeding Program, the BMI of the seventeen (17) Grade 1 learner-beneficiaries ranged from 8.90 to 11.80. All respondents were classified as severely wasted, with a mean BMI of 10.54. These findings established the baseline nutritional condition of the beneficiaries prior to the intervention. The severely wasted classification indicated that the learners had inadequate nutritional status that could affect their health and capacity to perform well in school. The finding supports the view that children who do not consume sufficient essential nutrients may experience difficulties in school performance (Nabarro et al., 2012). The results therefore emphasized the need for appropriate nutritional intake to address the learners' condition.

3.1.2 Nutritional Status After the School-Based Feeding Intervention

After a series of Strategic and Innovative School-Based Feeding Program sessions, the learners' BMI ranged from 12.60 to 14.80. Based on the classifications presented in the source, twelve learners were identified as having normal nutritional status and five as wasted. The reported mean was 13.58, classified as normal. The accompanying narrative in the source, however, stated a mean of 13.48. Despite this numerical inconsistency,

both reported means indicated an improvement from the pre-intervention mean. The improvement was attributed in the study to the provision of nutritious food packs, nutri-bun, and milk products by the City Schools Division of Dasmariñas through its HNU, together with healthy leafy vegetables harvested from Gulayan sa Paaralan and improved eating practices at home under parental supervision. The results support the conclusion of Lago and Quirap (2022) that SBFP implementation can contribute to rehabilitating severely wasted and wasted beneficiaries toward normal nutritional status.

3.1.3 Difference in Nutritional Status Before and After the Intervention

The mean nutritional status increased from 10.535 before the intervention to 13.582 after the intervention. The analysis obtained a T-Computed Value of 9.8024 and a P-Value of 0.0001 at the 0.05 level of significance. The result was considered highly significant, showing that the learners' nutritional status after the intervention was significantly higher than their baseline nutritional status. The finding indicated that the Strategic and Innovative School-Based Feeding Program was effective in improving the nutritional status of the Grade 1 learner-beneficiaries. Consequently, the first null hypothesis was rejected, indicating a significant difference in nutritional status before and after implementation of the intervention.

3.2 Academic Performance of Grade 1 Learner-Beneficiaries

3.2.1 Academic Performance Before the School-Based Feeding Intervention

Before the implementation of the Strategic and Innovative School-Based Feeding Program, the seventeen (17) Grade 1 learner-beneficiaries obtained a mean 1st Quarter General Average of 81.65, classified as Satisfactory. Their grades ranged from 71 to 90. Three learners were classified as Outstanding, three as Very Satisfactory, five as Satisfactory, three as Fairly Satisfactory, and three as Did Not Meet Expectations. The baseline results showed that although the overall academic performance of the group was Satisfactory, variations were evident among the learners, including several who did not meet academic expectations. These findings provided the basis for comparing academic performance after the implementation of the feeding intervention.

3.2.2 Academic Performance After the School-Based Feeding Intervention

After the implementation of the Strategic and Innovative School-Based Feeding Program, the mean 2nd Quarter General Average increased to 83.76, which remained within the Satisfactory classification. Individual averages ranged from 75 to 91. Four learners were classified as Outstanding, four as Very Satisfactory, five as Satisfactory, and four as Fairly Satisfactory. None of the learners remained under the Did Not Meet Expectations classification. The improvement in academic performance was consistent with the view that the management of school-based feeding programs can influence learners' academic performance by providing adequate food and nutritional support Demerin (2023). The finding was also supported by Lago and Quirap (2022), which indicated that SBFP contributed to improvements in the general averages of student-respondents, and Bilbar (2020) that school feeding contributes to the education and well-being of children.

3.2.3 Difference in Academic Performance Before and After the Intervention

The mean academic performance increased from 81.65 before the intervention to 83.76 after implementation. The analysis yielded a T-Computed Value of 4.2426 and a P-Value of 0.0006 at the 0.05 level of significance. The result was considered highly significant, indicating that the 2nd Quarter academic performance after the intervention was significantly higher than the 1st Quarter academic performance before implementation. The result indicated that the Strategic and Innovative School-Based Feeding Program contributed to a significant improvement in the learners' academic performance. The second null hypothesis was therefore rejected. The source's final statement refers to a significant difference in "nutritional status"; however, the statistical analysis and research question in this portion specifically concern academic performance.

4. Conclusion & Recommendations

The study concluded that the seventeen (17) Grade 1 SBFP beneficiaries were severely wasted before the implementation of the Strategic and Innovative School-Based Feeding Program. After the intervention, their nutritional status significantly improved from severely wasted to normal, while the program had only a minimal effect on their academic performance.

The School-Based Feeding Program should be intensified through strong collaboration and partnership with Gulayan sa Paaralan, School Health and Nutrition/WINS PPAs, parents, and other stakeholders to support its sustainability. Nutrition and health education should also be continuously promoted in both school and home settings, while further research on the effective implementation of the School-Based Feeding Program should be conducted to strengthen the findings and support wider scope and application.

The study was limited to the seventeen (17) Grade 1 SBFP beneficiaries included in the intervention. Further research was therefore recommended to amplify the findings and support broader scope, application, and generalization.

5. Compliance with ethical standards

The study was conducted in accordance with ethical considerations appropriate to its school-based context, with the involvement of school personnel, parents, and other stakeholders in the implementation of Project FeEDING. Existing nutritional status and academic records were used solely for the purposes of evaluating the intervention while respecting the welfare and educational interests of the Grade 1 learner-beneficiaries.

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