School Meal Programs and Student Learning Motivation: A Qualitative Case Study in Indonesia

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Abstract: Although school meal programs are widely associated with nutritional and health benefits, their relationship with students' learning motivation remains underexplored across diverse educational contexts. This study examines how Indonesia's Free Nutritious Meals (Free Nutritious Meals/MBG) program relates to students' learning motivation at SMA Gama Yogyakarta. Employing a qualitative case study design, data were collected through in-depth interviews, observations, and documentation and analyzed using an interactive analytical approach. The findings indicate that the program is perceived to support students' learning focus, reduce classroom lethargy, and contribute to more consistent school attendance. Adequate meal provision appears to function as an external support for daily academic engagement. However, menu variations and inconsistent meal distribution schedules present challenges to the program's sustained implementation. These findings suggest that school meal programs may support a more active learning environment when nutritional provision is accompanied by reliable logistical management. The study contributes context-specific evidence to discussions of school nutrition and educational engagement, highlighting the importance of integrating food provision with consistent service delivery. Its original contribution lies in identifying the perceived links between meal provision, classroom alertness, learning focus, and attendance within a single Indonesian secondary-school case.

Keywords: Student Engagement, Learning Motivation, Nutrition, School Meal Programs.

INTRODUCTION

Education is a fundamental pillar of human capital development, extending beyond knowledge transmission to encompass the enhancement of cognitive capacities, individual productivity, and socioeconomic well-being. From a human capital perspective, educational investment contributes to the development of competencies that enable individuals to participate meaningfully in social and economic life (Marginson, 2019). However, educational outcomes are not determined exclusively by curriculum quality, instructional strategies, or school facilities. Students' learning experiences are also shaped by internal and external conditions, including physical well-being, psychological readiness, and the social environment in which learning takes place (Sihombing et al., 2024; Kyndt et al., 2021). Understanding these interconnected factors is therefore essential for developing educational policies that support students' academic participation and motivation.

Ideally, an effective education system should provide not only equitable access to learning opportunities but also the basic conditions necessary for students to participate actively in classroom activities. Adequate nutrition is an important component of these conditions because students' physical well-being may be associated with their attention, alertness, and readiness to learn. From the perspective of human needs, physiological requirements constitute a fundamental basis for pursuing higher-level activities, including sustained engagement in education (Hena Naaz, 2023). Similarly, evidence concerning school health and well-being highlights the importance of addressing students' physical needs alongside their educational development (Langford, 2015). These perspectives suggest that school-based nutritional interventions should be examined not solely as health initiatives but also as potential contributors to the conditions supporting meaningful learning.

In Indonesia, the Free Nutritious Meals Program (Makan Bergizi Gratis, MBG) represents a government initiative intended to improve nutritional provision and support human resource development. By providing meals to schoolchildren, the program seeks to address nutritional concerns while extending public policy interventions into the educational environment (Yusuf, 2025; Jati et al., 2025). Its educational significance, however, extends beyond the distribution of food. The program also raises questions about whether improved access to meals is associated with students' classroom experiences, particularly their concentration, persistence, attendance, and willingness to participate in learning activities. Consequently, examining MBG through an educational lens can broaden the understanding of school meal programs from nutritional provision toward their potential relevance to students' everyday learning experiences.

Nevertheless, the intended benefits of school meal programs cannot automatically be assumed to emerge uniformly across educational settings. Their implementation may be influenced by food quality, menu acceptability, distribution schedules, and the characteristics of the students and schools receiving the intervention. Agustin et al. (2026) emphasize the importance of implementation quality, student acceptance, and school environmental conditions in understanding program effectiveness. These considerations indicate that the existence of a nutritional policy does not necessarily guarantee consistent educational benefits (Mitchell et al., 2026; Lee et al., 2026). In practice, irregular meal distribution or menus that do not adequately accommodate students' preferences may limit the program's perceived usefulness. Therefore, the relationship between MBG and learning motivation needs to be investigated in its actual institutional context rather than inferred solely from the program's policy objectives.

Learning motivation provides a relevant analytical perspective for examining this relationship. Motivation encompasses the internal and external processes that initiate, direct, and sustain students' engagement in learning. In the school context, it may be reflected in students' willingness to participate, maintain attention, persist through learning difficulties, and engage consistently in classroom activities. Although adequate nutrition may support the physical conditions associated with these behaviors, motivation is multidimensional and cannot be attributed to food provision alone. Teacher practices, peer relationships, family circumstances, learning environments, and individual differences may also shape students' experiences (Zeitlin et al., 2025). Accordingly, investigating students' responses to MBG requires attention to how nutritional provisions are experienced within the broader educational environment.

Existing research provides a foundation for understanding the relationship between nutrition and educational outcomes. Studies addressing school health and nutritional interventions have highlighted connections between students' physical well-being, classroom concentration, attendance, and learning readiness (Langford, 2015; Zahrah & Iftitah, 2023). Research on MBG has also discussed the program in relation to nutritional improvement and human resource development (Yusuf, 2025; Jati et al., 2025). These contributions establish the relevance of nutritional provisions to educational policy. However, as indicated by the literature discussed in this study, the educational implications of school meal programs require further examination, particularly concerning students' learning motivation in specific school settings. The distinction is important because improvements in nutritional

status or attendance do not necessarily establish corresponding improvements in motivation, and these outcomes should not be treated as interchangeable.

This issue identifies a research gap at the intersection of school nutrition policy and educational psychology. First, a nutritional perspective alone may not fully explain how students perceive and respond to meal provisions during their daily learning activities. Second, evidence concerning the implementation of MBG needs to be complemented by contextual accounts of students' learning experiences. Third, the relationship between school meal provision and learning motivation at the secondary education level warrants further qualitative investigation. Although Diandra et al. (2026) highlight the contribution of external factors to student engagement, understanding the role of a specific government nutritional intervention requires attention to the experiences and circumstances of its recipients. Addressing these gaps can provide a more nuanced account of how a school-based policy is perceived to interact with students' motivation without presuming a direct causal relationship.

SMA GAMA Yogyakarta provides a contextually relevant setting for examining these questions. The school's student population includes individuals with varied socioeconomic circumstances, including students living in boarding arrangements and rented accommodation. Such differences may shape students' everyday access to food, meal routines, and perceptions of the value of school-provided meals. These characteristics provide an opportunity to explore how MBG is experienced by students with different living arrangements within the same institutional environment. Nevertheless, the case should not be considered as representative of all Indonesian secondary schools. Rather, its value lies in generating contextualized insights that may inform analytical comparisons with schools in urban, rural, coastal, and other settings where nutritional needs and implementation conditions differ.

Against this background, the present study examines the relationship between the MBG program and students' learning motivation at SMA GAMA Yogyakarta using a qualitative case study approach. Specifically, it explores students' learning experiences in relation to concentration, classroom alertness, attendance, and enthusiasm for participating in learning activities, while also identifying implementation challenges that may influence their perceptions of the program. The study's originality lies in bringing these dimensions together within a single Indonesian secondary-school case, examining how meal provision, students' daily classroom experiences, and implementation consistency intersect. Rather than claiming that MBG

independently causes improvements in motivation, the study seeks to establish an empirically grounded understanding of the perceived educational relevance of school meal provision.

The urgency of this research stems from the need to evaluate nutritional interventions not only in terms of their intended health benefits but also in relation to the educational experiences of their recipients. By connecting the implementation of MBG with students' reported and observed learning experiences, this study contributes context-specific evidence to discussions of school nutrition, educational engagement, and public policy implementation. Its findings may inform school administrators and policymakers in improving menu acceptability, distribution consistency, and the integration of nutritional support into broader student welfare strategies. More broadly, the study offers an analytical starting point for comparative research examining how school meal programs operate across different educational and socioeconomic contexts.

METHOD

Research Design

This study employed a qualitative approach using a case study design to examine the relationship between Indonesia's Free Nutritious Meals Program (Free Nutritious Meals Program, MBG) and students' learning motivation at SMA GAMA Yogyakarta. A case study enables an in-depth investigation of a phenomenon within its real-life context by drawing on evidence from multiple sources. As discussed by Wulandari et al. (2025), this approach facilitates a comprehensive understanding of a particular case through the integration of different forms of empirical data. In this study, the case was defined as the implementation of MBG and its perceived relationship with students' everyday learning experiences in one secondary school. The qualitative design was selected to explore participants' perspectives, reported experiences, and observations concerning learning concentration, classroom alertness, attendance, and engagement. Accordingly, the study focused on understanding the contextual relationship between meal provision and learning motivation rather than establishing a statistically measurable causal effect.

Research Setting and Context

The research was conducted at SMA GAMA Yogyakarta, located in Santren, Caturtunggal, Depok District, Sleman Regency, Special Region of Yogyakarta, Indonesia. The school was purposively selected because it implemented the MBG program and presented a distinctive social context relevant to the research objectives. Some students reportedly came from families where their parents

worked as Indonesian migrant workers in Malaysia, while some lived in school dormitories during their students' education. The school also served students from economically disadvantaged backgrounds. These circumstances provided a relevant setting for exploring how school-provided meals were experienced by students whose living arrangements and access to everyday resources varied. The study therefore examined MBG within a specific institutional and economic context, with the intention of generating insights that could inform comparisons with other secondary schools implementing similar nutritional interventions.

Participants and Sampling Strategy

Participants were selected using purposive sampling, a non-probability sampling technique that identifies individuals with relevant knowledge or direct experience of the phenomenon under investigation (Sidiq, 2019). The participants comprised ten Grade XI students, the principal, and three vice principals responsible for student affairs, curriculum, and public relations, respectively. The students provided accounts of their experiences of receiving meals and their perceptions of learning motivation, while the school leaders provided institutional perspectives on program implementation and its educational relevance.

Table 1. Research participants and their roles

Participant group	Number	Primary contribution
Grade XI students	10	Experiences of meal provision and perceived learning motivation
Principal	1	School-level oversight and program implementation
Vice principal for student affairs	1	Student welfare and attendance-related observations
Vice principal for curriculum	1	Classroom learning and academic engagement
Vice principal for public relations	1	Institutional coordination and program-related information
Total	14	Student and institutional perspectives

The inclusion of students and school leaders enabled the study to examine the phenomenon from both individual and institutional perspectives. Nevertheless, the participants were selected for their relevance to the case rather than to represent the wider population statistics. The sample therefore supports an in-depth contextual analysis, while the transferability of the findings to other schools depends on similarities in implementation arrangements and student circumstances.

Data Sources and Collection Instruments

The study used primary and secondary data. Primary data were obtained through observations and in-depth interviews with the ten students, the principal, and the three vice principals. Secondary data includes school documents, records relating to MBG implementation, school regulations, photographs of program activities, relevant academic publications, and other documentary materials related to the research focus.

The researcher served as the primary research instrument, consistent with the qualitative principle that researchers are directly involved in collecting, interpreting, and contextualizing empirical evidence (Rachmann et al., 2024). Supporting instruments included interview guides, observation guidelines, and documentation records. These instruments were intended to maintain alignment between data collection and the research objectives while allowing participants to describe experiences and perspectives in their own terms.

Data were collected using three techniques:

1. Participant observation. The researcher observed MBG implementation and students' learning conditions within the school environment. The observations focused on meal distribution, students' responses to the program, and observable classroom conditions relevant to learning engagement. Observational evidence was considered alongside interview accounts rather than treated as sufficient, on its own, to establish changes in motivation.
2. In-depth interviews. Interviews explored participants' experiences and perspectives regarding meal provision and its perceived relationship with students' learning motivation. Student interviews focused on their experiences of receiving meals, concentration during lessons, classroom alertness, attendance, and enthusiasm for learning. Interviews with the principal and vice principals explored program implementation, student welfare, curriculum-related observations, and institutional coordination.
3. Document analysis. Relevant school records, program archives, school regulations, photographs, and other available documents were examined to provide contextual information and corroborate accounts obtained through interviews and observations. Documentary evidence also helped individual experiences within the school's implementation arrangements.

The use of multiple data sources allowed the researcher to compare individual accounts with institutional perspectives and available documentary evidence. The combination of interviews, observations, and documents was intended to provide a more comprehensive understanding of the case.

Data Analysis

The data were analyzed using the interactive qualitative analysis model associated with Miles and Huberman, consisting of data reduction, data display, and conclusion drawing and verification. The three components were treated as interconnected analytical activities rather than strictly sequential stages. The approach was used to organize empirical material, identify patterns, and develop interpretations relevant to the research questions (Aulia, 2025; the full bibliographic details should be verified).

The analysis proceeds through three stages:

1. Data reduction. Interview transcripts or records, observation notes, and documentary materials were reviewed to identify information relevant to MBG implementation and learning motivation. Relevant data were organized into analytical categories, including learning concentration, classroom alertness, attendance, enthusiasm for learning, and implementation challenges. This process helped distinguish evidence directly related to the research questions from information with limited analytical relevance.
2. Data display. The organized data were presented in descriptive summaries and thematic matrices to facilitate comparison across participants and sources. Student accounts were compared with the perspectives of school leaders and relevant observational or documentary evidence. Attention was given to convergent accounts, differences in perspectives, and findings that required further contextual interpretation.
3. Conclusion drawing and verification. Interpretations were developed by examining recurring patterns, relationships among categories, and differences across data sources. Emerging conclusions were checked against the available empirical material to ensure that the interpretations remained grounded in the evidence. Where accounts differ, these differences were considered as part of the contextual complexity of the case rather than automatically treated as errors.

Through this process, the study sought to explain how participants perceive the relationship between school meal provision and students' learning motivation, as well as the implementation conditions that might shape those perceptions.

Research Trustworthiness and Ethical Considerations

To strengthen the methodological rigor of the study, the use of interviews, observations, and documentary evidence provides a basis for source triangulation. Comparing these sources can help identify consistencies

and differences in participants' accounts and strengthen the contextual interpretation of the findings. However, the actual procedures used to establish trustworthiness must be reported explicitly. Information concerning participant verification (member checking), peer debriefing, an audit trail, or other verification procedures should be included only if these activities are conducted.

Ethical considerations are particularly important because the study involves secondary-school students, who may include participants under the age of 18. The final manuscript should specify whether institutional research permission was obtained, how informed consent was secured from adult participants, and whether parental or guardian consent and student assent were obtained where applicable. It should also explain how confidentiality, anonymity, and the secure handling of interview records were maintained. The relevant institutional ethical approval or exemption should be reported where applicable. These details are necessary to demonstrate responsible research practice and should reflect the procedures actually followed.

RESULTS AND DISCUSSION

Results

Implementation of the Free Nutritious Meals Program at SMA GAMA Yogyakarta

The findings indicated that the Free Nutritious Meals (MBG) Program had been implemented at SMA GAMA Yogyakarta for approximately one year at the time of the study. Overall, school representatives considered its implementation satisfactory, although several technical problems occurred during the initial phase. These included spoiled milk and the discovery of caterpillars in vegetables. According to the school's accounts, the Unit for Nutrition Fulfillment Services (SPPG), the unit responsible for providing the meals, responded to reported problems and participated in subsequent improvements. This pattern suggests that implementation quality was shaped not only by the availability of meals but also by the responsiveness of the service provider to food-quality concerns.

SMA GAMA Yogyakarta did not establish a dedicated team specifically responsible for MBG implementation. Instead, daily operational supervision was assigned to teachers on duty. Their responsibilities included monitoring meal distribution, ensuring that students received their allocated meals, and coordinating the collection of food containers after use. Meanwhile, strategic coordination, information dissemination, and the handling of complaints were managed by the vice principal for public relations. This arrangement illustrates a distributed management model in which operational responsibilities are integrated into existing school duties rather than organized through a separate administrative unit.

An important feature of the implementation was that teachers reportedly did not perceive the program as an additional workload. Teachers assigned to daily duty were relieved of their teaching schedules on those days, allowing them to concentrate on meal distribution and other supervisory responsibilities. This arrangement helped the school incorporate MBG into its existing organizational routines. The finding indicates that the perceived administrative burden of a school meal program may depend partly on how responsibilities are allocated and coordinated within the institution.

Meals generally arrive at school between 8:00 and 9:00 a.m. Western Indonesian Time (WIB) and were distributed during the first break, approximately between 9:15 and 9:30 a.m. Scheduling distribution during the break was intended to maintain order and minimize disruption to classroom instruction. School representatives and students also described the timing as beneficial because students could receive food before returning to subsequent lessons. However, the schedule did not always proceed as planned, as occasional delivery delays forced distribution to be postponed until the second break. Such delays were associated with students experiencing hunger and reduced enthusiasm before receiving their meals.

The meals generally consist of rice, a protein-based side dish, vegetables, and fruit. Informants responded positively to the provision of a complete meal, although students continued to express dissatisfaction with taste and menu variety. The SPPG reportedly sent the following week's menu plan and nutritional information to the school at the end of each week, enabling school representatives to monitor the planned provision. Food-safety oversight also included restrictions on certain items, such as noodles, selected dry foods, and food coloring. Although the school reported gradual improvements in service quality, the initial food-safety incidents and continuing complaints about menu preferences demonstrate that nutritional provisions and student acceptance are distinct aspects of program implementation.



Figure 1. Documentation of the MBG Program at SMA GAMA Yogyakarta

This photograph documents the implementation of the Free Nutritious Meals (MBG) Program at SMA GAMA Yogyakarta. It provides a visual context for understanding how school meal provisions form part of students' daily school experiences. The documentation complements the findings concerning meal distribution and the provision of food as a form of nutritional support. However, the photograph should be interpreted as contextual evidence of program implementation rather than direct evidence of changes in students' learning motivation.

The Relationship Between MBG and Students' Learning Motivation

The findings suggest that students and school representatives associated MBG with several dimensions of the school experience. These perceived benefits can be organized into three interconnected layers: the provision of daily energy, relief from students' and families' food-related expenses, and the development of more positive social interactions through shared meals. The first layer concerns students' physical readiness for learning; the second involved the economic circumstances surrounding school attendance; and the third relates to relationships among students and the broader learning environment. Together, these findings indicate that participants understood the program as more than a nutritional intervention, although the evidence does not establish that each dimension independently increased learning motivation.

Before MBG was implemented, some informants reported that students attended school without breakfast and experienced hunger during lessons. School representatives associated these circumstances with weakness, drowsiness, reduced concentration, and occasional sleeping in class. Following the introduction of MBG, students participating in the focus group discussion (FGD) reported feeling more energetic and better prepared to participate in school activities. The principal also observed improvements in students' concentration, which were attributed to reduced distraction caused by hunger. These accounts suggest that access to a meal during the school day was perceived as supporting physical readiness and classroom alertness.



Figure 2. Focus Group Discussion on the MBG

Program with Students of SMA GAMA Yogyakarta

his photograph documents the focus group discussion (FGD) conducted with students of SMA GAMA Yogyakarta to explore their experiences and perceptions of the MBG Program. The discussion provided an opportunity for students to express their views on meal provisions, classroom alertness, concentration, and enthusiasm for learning. The FGD documentation is relevant to the qualitative nature of the study because students' perspectives constitute an important source of evidence for interpreting the perceived relationship between school meals and learning motivation. The photograph documents the data collection process, while the substantive findings are established through the analysis of participants' accounts.

An unexpected finding was that some students experienced temporary difficulty maintaining concentration as the distribution time approached because they were eager to receive their meals. Nevertheless, the school considered this response manageable because distribution was scheduled during the break. Students also differed in their perceptions of motivational change. The principal observed a noticeable increase in enthusiasm, particularly during the early hours of instruction, whereas some students reported that MBG did not fundamentally change their underlying orientation toward learning. For these students, intrinsic motivation remains central, while the program served as an external source of physical support. Students additionally expressed a desire for better school facilities, more extracurricular activities, and greater access to information about competitions and personal development opportunities.

School representatives reported improved attendance among some students who had previously been frequently absent without explanation. The availability of free meals was described as a pull factor encouraging school attendance, particularly among students facing economic constraints and those living in dormitories. However, the principal emphasized that the change was not widespread across the entire student population. Some students reportedly continued attending school even when feeling unwell because they didn't want to miss their daily meal. The findings therefore reveal both the potential of food provision to encourage attendance and a concern that the meal benefits might motivate attendance independently of students' physical readiness to participate in learning.



Figure 3. Research Documentation with the Principal of SMA GAMA Yogyakarta

This photograph documents the research interaction with the principal of SMA GAMA Yogyakarta, whose institutional perspective contributed to the understanding of MBG implementation at the school. The principal's account provided contextual information about program management, student welfare, classroom conditions, and perceived changes in students' learning experiences. This documentation illustrates the involvement of school leadership in the research process. The principal's observations should nevertheless be considered alongside students' accounts and other available evidence to provide a balanced interpretation of the program's perceived educational relevance.

The program was also reported to reduce daily food-related expenses for students, their families, and teachers. The financial benefit was particularly noticeable among students living in rented accommodation or school dormitories, who no longer needed to allocate as much money or time to obtain breakfast outside school. Participants also described more regular access to vegetables and fruit compared with their previous reliance on fast food. In the social dimension, shared meals were perceived to strengthen relationships and foster a sense of togetherness among students. These economic and interpersonal experiences formed part of the broader context through which participants evaluated MBG and its contribution to a more supportive school environment.

Supporting Factors and Implementation Challenges

The implementation findings also identified several enabling conditions and operational constraints. The reported supporting factors included the

SPPG's experience in preparing meals in large quantities, advance notification of delivery schedules, provision of nutritional information, coordination through a WhatsApp group involving participating schools, and teachers' cooperation in rotating supervisory duties. Conversely, challenges included collecting food containers after distribution locations changed, concerns about possible charges for missing containers, initial food-quality problems, occasional delivery delays, and differences in students' food preferences. These findings indicate that the educational relevance of MBG depends partly on the consistency of logistical operations and the school's capacity to respond to practical implementation problems.



Figure 4. Research Documentation with the MBG Program Coordinator at SMA GAMA Yogyakarta

This photograph documents the research interaction with the MBG program coordinator at SMA GAMA Yogyakarta. The coordinator's perspective is relevant to understanding the operational aspects of the program, including communication, meal distribution, coordination with the food service provider, and responses to implementation challenges. The documentation complements the findings on the organizational arrangements that support program delivery. Together with student and school-leadership perspectives, information from program coordination can help explain how logistical consistency and service quality shape the school's experience of the MBG Program.

Discussion

School Meal Provision as a Foundation for Learning Readiness

The findings extend the discussion of school meal programs beyond nutritional provisions by showing how students and school representatives

connect access to meals with classroom readiness. Reports of reduced hunger, greater energy, and improved concentration suggest that participants perceive MBG as supporting the physical conditions required for learning. This interpretation is consistent with the basic-needs perspective associated with Maslow's hierarchy of needs, in which physiological requirements constitute a foundation for pursuing higher-order activities (Muazaroh & Subaidi, 2019). Nevertheless, the findings should be interpreted as evidence of perceived relationships rather than evidence that meal provision independently produces higher motivation. Learning readiness is influenced by multiple factors, and nutrition represents one relevant component of a broader educational environment.

An important analytical distinction emerges between being physically prepared to learn and being intrinsically motivated to learn. Students who reported feeling more energetic did not necessarily describe a fundamental change in their interest in academic activities (Zuercher et al., 2026). This distinction suggests that MBG may support the conditions under which learning occurs without directly transforming students' personal goals, interests, or persistence. In motivational terms, the availability of food can function as an external support, while sustained engagement may still depend on students' individual aspirations, perceived competence, and experiences of autonomy. This interpretation helps explain why the program's perceived benefits vary among students despite their access to the same institutional intervention.

The distribution schedule represents another important dimension of implementation. Delivering meals before subsequent lessons was intended to reduce hunger without interrupting instructional time. However, reports of temporary distraction before distribution and reduced enthusiasm when delivery was delayed demonstrate that the timing of a nutritional intervention can itself shape classroom experiences. The findings therefore suggest that the educational relevance of a school meal program depends not only on whether food is provided but also on when and how consistently it reaches students. This issue is particularly important where students depend on school meals to meet part of their daily food needs.

The contrast between positive responses to complete meals and complaints about taste and menu variety highlights the difference between nutritional objectives and students' actual acceptance of the food. A menu may be designed to meet nutritional requirements, yet its perceived usefulness may be constrained if students find it unappealing or if delivery is inconsistent. The reported incidents involving spoiled milk and

contaminated vegetables further illustrate why food safety must remain central to program implementation. These findings support the interpretation that implementation quality is multidimensional, encompassing nutritional adequacy, food safety, acceptability, and reliability. Consequently, evaluations of school meal programs should consider service delivery and recipients' experiences alongside the policy's stated nutritional objectives.

Economic relief and unequal student circumstances. The reported reduction in food-related expenses suggests that MBG may have a different practical significance for students depending on their living arrangements and household resources. Students living in dormitories or rented accommodation may have fewer opportunities to rely on meals prepared at home and may need to manage their daily food expenditure independently. For these students, school-provided meals can represent both nutritional support and financial relief. The finding that attendance-related benefits were more noticeable among economically constrained students further indicates that the program's perceived value may vary according to socioeconomic circumstances. However, the present case does not establish the magnitude of these differences or demonstrate that all economically disadvantaged students experience the same benefits.

Attendance as a complex indicator of program relevance. The reported increase in attendance among some students suggests that access to meals can become an incentive for school participation. Nevertheless, the accounts of students attending even when feeling unwell complicate an unclear interpretation of attendance as a positive outcome. Increased attendance at school does not necessarily indicate improved health, stronger academic motivation, or more effective learning. Rather, attendance may reflect a combination of educational commitment, material needs, and the perceived value of the meal. This distinction is important for evaluating MBG because attendance should be considered alongside student well-being and actual classroom participation rather than treated as an independent indicator of educational success.

Shared meals and the social environment of learning. The reported strengthening of relationships through shared meals points to a social dimension of the program that is not captured by nutritional indicators alone. Eating together may create opportunities for interaction, familiarity, and a sense of belonging among students. These experiences may contribute to a more supportive school climate, which is relevant to students' everyday educational experiences. However, the evidence in this case concerns participants' perceptions of togetherness and improved relationships; it does

not establish a direct effect on academic performance or demonstrate that social cohesion necessarily produces higher motivation. The finding nevertheless identifies shared meals as a meaningful dimension for further investigation in school nutrition research.

Institutional coordination and organizational capacity. The school's use of existing teacher-duty arrangements, advance menu information, and communication with the SPPG illustrates how organizational practices can facilitate program delivery. Teachers reportedly did not experience an additional workload because their duty schedules were adjusted to accommodate supervision. This finding suggests that program implementation may be more manageable when responsibilities are integrated into existing routines and when communication channels allow problems to be reported efficiently. At the same time, the absence of a dedicated MBG team means that the clarity of assigned responsibilities and the continuity of coordination remain important considerations. The case highlights operational arrangements as a relevant part of understanding how school meal policies function in practice.

Theoretical contribution: an interconnected, three-layer interpretation. The distinctive analytical contribution of this study is its identification of three interconnected dimensions through which participants understood MBG: physical readiness for learning, economic relief, and social interaction. Maslow's basic-needs perspective helps interpret the first dimension by emphasizing the relevance of physiological needs to learning readiness (Muazaroh & Subaidi, 2019). The students' accounts of intrinsic motivation and the program's role as an external supporter further indicate that nutritional provisions should not be equated with the motivational processes that sustain learning. The economic and social dimensions broaden this interpretation by situating students' experiences within their living circumstances and school relationships. This three-layer interpretation is an empirically grounded framework derived from the present case, rather than a validated general theory applicable to all school meal programs.

Positioning the findings within international research. The findings contribute a context-specific perspective to international discussions of school nutrition and educational engagement. Rather than treating meal provisions as an intervention whose success can be inferred solely from nutritional objectives, the study demonstrates the analytical value of examining students' experiences, institutional routines, and implementation challenges together. Its distinctive finding is that perceived benefits to learning readiness coexisted with unchanged intrinsic motivation among some students, temporary pre-

meal distraction, and attendance incentives that do not always correspond to good health. These contrasts indicate that school meal programs may support educational participation while producing varied experiences among recipients. Further comparative research is needed to determine whether the three-layer pattern identified at SMA GAMA Yogyakarta also appears in other schools and socioeconomic contexts.

The findings have practical implications for school administrators, nutritional service providers, and education policymakers. At the operational level, schools and SPPG providers should strengthen food-safety monitoring, improve menu acceptability, maintain reliable delivery schedules, and establish clear procedures for distributing and collecting food containers. At the educational level, meal provisions should be integrated with broader efforts to support students' motivation, including appropriate teaching practices, access to extracurricular activities, and opportunities for personal development. The study also suggests that program evaluation should distinguish nutritional provision, perceived learning readiness, attendance, and intrinsic motivation rather than combining them into a single measure of success. These implications are derived from the experiences reported in this case and should be adapted to the institutional conditions of other schools.

This study has several limitations. First, it examines one secondary school, so the findings cannot be assumed to represent all Indonesian schools or all MBG recipients. Second, the qualitative design relies on participants' accounts, observations, and available documents; it does not provide experimental evidence or quantitative estimates of the program's effects on motivation, attendance, or academic achievement. Third, the reported improvements were not accompanied in the available material by standardized motivation measures, longitudinal attendance statistics, or systematic comparisons of students' experiences before and after implementation. Fourth, the accounts indicate variation among students, but the available evidence does not establish the prevalence of each response across the entire student population. These limitations mean that the findings should be understood as contextual insights into perceived relationships and implementation experiences rather than conclusive evidence of causal effects.

Future research should examine MBG across multiple schools with contrasting socioeconomic and geographical characteristics, including urban, rural, coastal, and remote settings. Comparative studies could investigate whether students' living arrangements, household food security, and access to meals at home shape their perceptions of school meal programs. Mixed-

methods research could combine interviews and observations with validated measures of learning motivation, classroom engagement, attendance records, and indicators of food acceptability. Longitudinal designs would also help establish whether perceived changes persist over time and how they relate to students' academic experiences. At the implementation level, future studies should assess the relationship between menu acceptability, delivery consistency, food safety, and student participation. Such research could clarify which program components are most relevant to students' experiences without assuming in advance that meal provision alone determines motivation.

CONCLUSION

This study examined the implementation of Indonesia's Free Nutritious Meals Program and its perceived relationship with students' learning motivation at SMA GAMA Yogyakarta. The findings indicate that students and school representatives associated the program with improved physical readiness, greater classroom alertness, reduced hunger-related distraction, and, for some students, more consistent attendance. The study's distinctive contribution is its identification of three interconnected dimensions of perceived benefit: daily energy for learning, relief from food-related expenses, and strengthened social interaction through shared meals. At the same time, the findings demonstrated that these benefits were not uniform. Some students reported no fundamental change in intrinsic motivation, while anticipation of meals and occasional delivery delays could temporarily affect classroom experiences. The program was therefore perceived as a supportive component of the learning environment rather than a sufficient intervention for improving motivation on its own.

The findings suggest that the educational relevance of school meal programs depends on more than the provision of food; it also involves reliable delivery, acceptable menus, food safety, and sensitivity to students' different circumstances. Schools and SPPG providers should strengthen coordination and quality control, while education policymakers should evaluate nutritional interventions alongside broader indicators of student well-being and educational engagement. Schools should also complement supportive meal provisions with teaching practices, extracurricular opportunities, and initiatives that encourage students' intrinsic motivation. Because this research concerns a single school and does not establish causal effects, further comparative and longitudinal studies are needed to assess the transferability and persistence of the observed patterns. The three-layer

interpretation developed in this study offers a contextual starting point for examining how nutritional support, economic circumstances, and social experiences intersect in the implementation of school meal programs.

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