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The Effects of the Free Nutritious Eat Policy on Students' Concentration, Motivation, and Physical Well-Being in Learning at Public Middle Schools in Banten Province

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ABSTRACT: This study aims to examine the impact of the Free Nutritious Eat (MBG) policy on the concentration, motivation, and physical as well as psychological conditions of Public Middle School students in Banten Province. The research employed a quantitative survey method using a questionnaire instrument, which was completed by 69 teachers from Public Middle School in Banten Province that have implemented the Free Nutritious Eat (FNE) program. The analysis results indicate that the Free Nutritious Eat (FNE) program has a positive effect on students' concentration, particularly in improving their ability to stay focused and readiness to participate in lessons. Additionally, students were observed to be more cheerful, enthusiastic, and physically fitter after receiving nutritional intake from the program. However, the influence of FNE on the speed of understanding the learning material has not shown a significant impact, suggesting the need for improvements in other learning aspects. In conclusion, the Free Nutritious Eat (FNE) program is effective in enhancing the quality of students' learning processes and is recommended to be further developed in an integrated manner with other quality improvement programs in education.

KEYWORDS: Education Policy, Free Nutritious Eat, Learning Concentration, Student Motivation, Physical Condition, Junior High School.

Introduction

Fulfilling nutritional needs during basic education is essential and must be carefully addressed. Nutrition among students at the basic education level is one of the key factors influencing their growth, development, and learning capabilities. During early adolescence, both cognitive and physical development occur rapidly, requiring a balanced nutritional intake. This nutrition plays a crucial role in supporting students' academic and social activities. A systematic review showed that school feeding programs increased attendance by an average of 2.6% in a year (Kristjansson et al., 2021: 5). However, not all families are able to provide optimal nutrition for their children due to various economic limitations and lack of access to nutritious food (Gelli et al., 2021: 2).

To address these issues, the government has taken an active role through the implementation of a free nutritious meal (FNE) policy for Public Middle School students. This policy is being implemented nationwide across Indonesia. In Banten Province, the program is currently being implemented in Serang City, Tangerang City, South Tangerang City, and Tangerang Regency. The program aims to improve students' nutritional status, enhance health conditions, and foster a more conducive learning environment by increasing student concentration, motivation, and enthusiasm for learning (Al Fazri et al., 2025: 868). Ultimately, it is expected to positively impact the learning process and outcomes.

Several studies have shown that children who receive adequate nutrition tend to perform better academically (Afridi et al., 2023: 99–103). This includes higher concentration, faster comprehension of learning materials, and more stable and positive psychological conditions. Additionally, nutritious meal programs have a direct impact on students' physical fitness and cheerfulness during classroom learning. A study in Pakistan found that students receiving school meals showed significant improvements in scores on the Raven's Colored Progressive Matrices cognitive test after six months (Soofi et al., 2023: 4). With better physical well-being and a cheerful mood, students tend to be more active, engaged, and receptive to information delivered by teachers. The implication is an overall improvement in the quality of learning outcomes.

The implementation of this policy requires comprehensive evaluation to determine its effectiveness. This evaluation is carried out from the perspective of educators—specifically, teachers. Teachers are directly exposed to the changes brought about by this program and are in a position to assess its real impact on students' concentration, motivation, and physical and

psychological conditions in the classroom. The data collected from questionnaires completed by teachers in Serang City and Tangerang Regency provide an initial insight into their perceptions of the effects of the free nutritious meal policy.

Therefore, a more systematic study is needed to examine in depth how the free nutritious meal program affects various aspects of student learning, as well as the factors that support or hinder the achievement of the policy's objectives. This research is expected to contribute significantly to the development of more holistic and sustainable education and health policies.

THEORETICAL FRAMEWORK

Nutrition is one of the key external factors influencing children's growth and development, including their learning capacity at school (WHO, 2018: 67). During early adolescence (ages 12–15), nutritional needs increase due to rapid physiological changes, both physical and neurological. Micronutrient deficiencies such as iron, iodine, and vitamin A can lead to anemia, cognitive impairment, and decreased immunity (Black et al., 2013: 8). This is particularly concerning for adolescent girls, who are at higher risk of anemia due to menstruation and increased nutritional demands during growth (Kirana, 2011: 5). Adequate nutrition is essential to ensure that adolescent girls can reach their full potential in both learning and personal development.

The free nutritious meal program is seen as a promising intervention to address nutritional deficits and foster a more productive learning environment. According to Adair and Popkin (2020:21), school-based nutritional interventions at the primary and secondary levels not only improve students' nutritional status but also have a direct positive impact on their academic performance. The implementation of such programs is essential for supporting the growth and development of adolescent girls in educational settings. Beyond improving nutritional status, the program also aims to reduce the risk of anemia among adolescent girls, thereby supporting their overall academic achievement.

Concentration is defined as the ability to focus attention on a particular object or activity without being easily distracted by external stimuli (Santrock, 2019:14). In a learning context, concentration is crucial for absorbing information, understanding material, and performing academic tasks such as reading, writing, and calculation. High levels of concentration enhance learning effectiveness and help students achieve academic goals more efficiently. Strong concentration skills are also associated with better academic adjustment and performance. A conducive learning environment plays a critical role in fostering student concentration.

Several factors affect concentration, including energy levels, nutritional status, emotions, classroom atmosphere, and short-term health. Adequate nutrition can increase blood glucose levels the brain's primary energy source thereby directly improving students' concentration (Chang et al., 2021: 12). In addition, classroom climate and students' mental health are vital to ensuring sustained focus. Good mental health enables students to be more engaged and focused during learning, which positively impacts academic outcomes.

Learning motivation refers to the internal and external drives that ignite and sustain students' interest and perseverance in academic pursuits (Pintrich & Schunk, 2020: 16). According to Maslow's hierarchy of needs, the fulfillment of physiological needs such as food and water is a prerequisite for the pursuit of higher-level needs, including esteem and self-actualization through academic achievement. Motivation is rooted in the satisfaction of basic needs, progressing toward higher-order aspirations. Local studies show a positive correlation between good nutritional status and learning motivation, as well-nourished students display greater energy and focus during learning activities. When basic needs are unmet, learning potential is often hindered by physical and psychological disturbances. Therefore, education policies must prioritize meeting students' fundamental needs before implementing higher-level motivational strategies. A strong foundation of learning motivation depends on the fulfillment of students' physiological needs and sense of security.

Physical and psychological conditions are closely linked to students' readiness to learn. A healthy body and a cheerful mind foster a positive mood, making it easier for students to absorb information, participate actively, and retain academic content (Dewi & Pratiwi, 2021: 5). Physical health directly influences learning ability, as a fit body provides optimal energy for sustained focus and active participation. Studies have shown that physically fit students tend to have better cognitive abilities, particularly in working memory and decision-making (Larson et al., 2022: 14). A non-fatigued, healthy body enables students to maintain consistent attention throughout the learning process. Moreover, simple physical activities, such as light exercise before class can improve blood flow to the brain, enhancing mental alertness. Therefore, schools should integrate basic physical fitness programs into their daily routines. This aligns with WHO recommendations (2023), which state that children and adolescents should engage in at least 60 minutes of moderate physical activity daily.

RESEARCH METHOD

This study employed a quantitative approach with a survey design. This approach was selected to systematically measure teachers' perceptions through a closed-ended questionnaire using an ordinal scale. The collected data were then analyzed using descriptive statistics to provide a general overview of the policy's effectiveness from the teachers' perspective.

The population of this study consisted of Public Middle School (PMS) teachers in Serang City and Tangerang Regency, where the free nutritious meal program was implemented. The research sample included 69 teacher respondents from several schools such as of Public Middle School (PMS) 4 Serang City, S Public Middle School (PMS) 15 Serang City, Public Middle School (PMS) 25 Serang City, Public Middle School (PMS) 27 Serang City, Public Middle School (PMS 2 Tigaraksa, and others. The sampling technique used was purposive sampling, selecting respondents based on their direct experience in observing changes in students following the implementation of the program.

Data were collected by distributing electronic questionnaires to teachers in the Serang City and Tangerang Regency areas. The questionnaire consisted of five items related to indicators of students' concentration, motivation, and physical-psychological condition. Each response was categorized using a Likert scale as follows:

Table 3.1 Likert Scale for Variable

Score	Information
1	No Implications
2	Quite Implications
3	Good Implications
4	Very Good Implications
5	Very Good Implications

In this study, the dependent variable (Y) is defined as students' fitness in participating in learning activities. This variable specifically examines how the free nutritious meal policy influences students' physical and mental readiness during the learning process. It encompasses not only physical stamina but also psychological well-being, both of which are essential for effective engagement in classroom activities.

Several measurable sub-variables are included to represent this construct, namely: students' endurance during lessons, their physical strength in sustaining learning tasks, their cheerfulness and enthusiasm during classroom interactions, their speed in comprehending the material presented, and their overall physical and mental fitness as perceived by the teachers. To assess these indicators, a Likert scale was used, allowing respondents to express the degree of their agreement or observation based on standardized response options.

Table 3. 2 Likert Scale Variable Y

scale	information
1	Not fit not cheerful (TB)
2	Quite fit and quite cheerful (CBCC)
3	Very fit and cheerful (BCS)
4	Very fit and very cheerful (SBSCS)

The questionnaire was distributed and completed by respondents during the period of May 24 to June 5, 2025. The collected data were then tabulated and analyzed to obtain the mean scores and percentages for each indicator. The primary instrument used in this study was a structured questionnaire based on five key research variables: (1) the effect of the policy on students' learning concentration, (2) the impact of the policy on students' concentration endurance, (3) the influence of the policy on learning motivation, (4) the effect of the policy on comprehension of learning materials, and (5) the impact of the policy on students' physical and psychological condition (fitness and cheerfulness). Each questionnaire item used a five-point Likert scale, ranging from "very unimpactful" to "very highly impactful." Instrument validation was conducted through a preliminary trial and peer review to ensure content validity and reliability of the measurement tool.

Data analysis was carried out using two main approaches: **descriptive statistical analysis** and **correlational analysis**. Descriptive statistics were used to calculate the average score for each item, convert mean scores into percentages for easier interpretation, and present the results in tables and visual graphs.

In this study, the data analysis technique employed was the **Kendall's Tau_b correlation test**, a non-parametric statistical method suitable for ordinal data that do not meet the assumption of normality. This test was used to determine the strength and direction of the relationship between variables—specifically, concentration and motivation as independent variables, and student fitness as the dependent variable. The Kendall's Tau_b test is appropriate for paired data and small to medium sample sizes, as was the case in this study involving 69 respondents. Statistical analysis was performed using SPSS version 25 to ensure the accuracy of calculations. A significance level of **p ≤ 0.05 (Sig. 2-tailed)** was used as the threshold to determine the statistical significance of the relationships between variables.

RESEARCH OF RESULTS

Analysis of Teachers' Perceptions of the Free Nutritious Meal (MBG) Program

The free nutritious meal program launched by the government has received a positive response from junior high school teachers in Serang City. The majority of teachers reported that the policy has had a significant impact on students' concentration during the learning process. On indicators such as increased focus and sustained attention, the dominant responses were "Positive Impact" and "Very Positive Impact." This indicates that adequate nutritional intake helps students remain more focused and sustain their attention for longer periods.

Teachers observed that students appeared more prepared to engage in lessons, which serves as an initial indicator of the policy's effectiveness. These findings reinforce the argument that school-based nutritional interventions are highly relevant in supporting students' cognitive functions.

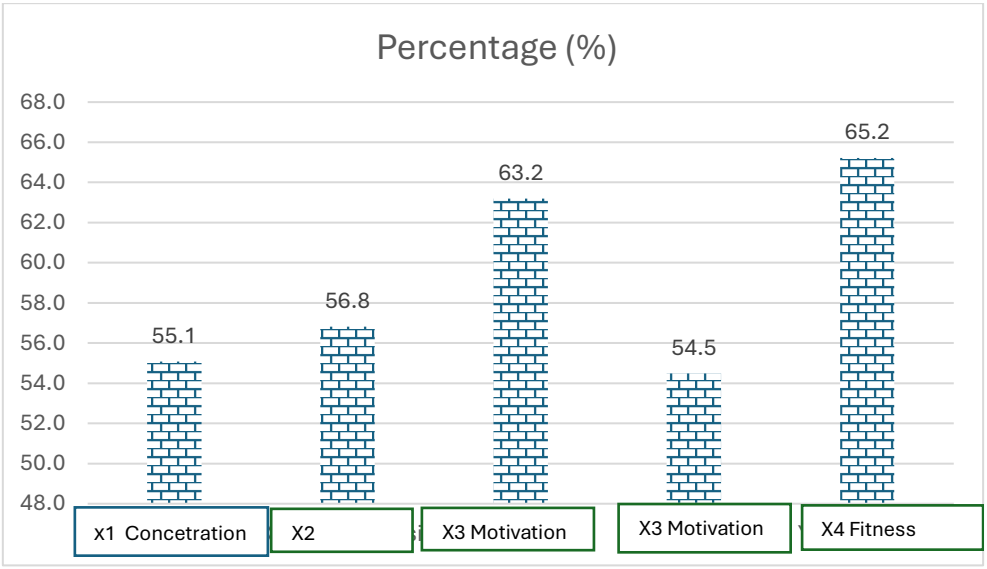

Figure 1. Graph of teacher perceptions of MBG

In addition to improved concentration, teachers also reported an increase in students' cheerfulness and enthusiasm for learning. Regarding the indicator of increased student cheerfulness, nearly all respondents gave positive assessments. Teachers observed that the classroom atmosphere became more lively and the interaction between students and teachers became more enjoyable after the implementation of the nutritious school meals program. This reflects how the fulfillment of students' basic needs directly influences emotional and social aspects within the learning environment. Recent qualitative studies show that social interaction during meals can enhance social support, thereby reducing stress and allowing children to enjoy meals comfortably (Chapman et al., 2025: 3). The more active and expressive presence of students indicates that the program has not only physical impacts but also psychological ones. This aligns with findings from a study in Ethiopia that reported improvements in emotional well-being and social interaction due to shared mealtime experiences (Monir et al., 2024: 5). It can be concluded that providing nutritious meals at school may serve as an effective strategy for fostering a positive learning atmosphere.

However, some teachers stated that the program's effect on the speed of students' material comprehension was not uniformly observed. Several respondents indicated "No Impact" under the indicator of students learning more quickly. Although many teachers observed that students appeared healthier and more cheerful, the effect on cognitive abilities such as understanding learning materials seems to require more time to fully manifest. This may be influenced by other factors such as teaching quality, instructional methods, or student readiness to grasp the content. School meal programs are generally more impactful on affective aspects (such as mood and energy), while their effects on cognitive performance, including comprehension,

tend to be heterogeneous and slow to emerge (School Meals Coalition, 2024: 12). A study in Uganda confirmed that school meal interventions not only improved nutritional status but also supported psychosocial well-being (Adelman et al., 2019: 7). Therefore, this program deserves to be scaled up with regular evaluations to ensure its impact becomes more optimal and sustainable.

Relationship Between Concentration (X1) and Physical Fitness (Y)

The analysis results indicate a significant relationship between the variable Concentration (X1) and Physical Fitness (Y), with a significance value of 0.037, which is less than 0.05. This means that statistically, an increase in concentration as stated in variable X1 is associated with an increase in physical fitness levels. The Kendall's Tau correlation coefficient of 0.231 indicates a positive direction of the relationship between the two variables. This is a unidirectional relationship, meaning the higher the students' concentration in the activities indicated by statement X1, the more likely their fitness levels increase as well. Although the strength of this correlation is relatively weak, it remains relevant in the context of education and student physical well-being. The practical implication of this finding suggests that designing interventions to improve concentration could serve as a strategic component in enhancing students' physical fitness.

Correlations

			Concentration_X1	Fitmess_Y
Kendall's tau_b	Concentration_X1	Correlation Coefficient	1.000	.231*
		Sig. (2-tailed)	.	.037
		N	69	69
	Fitness_Y	Correlation Coefficient	.231*	1.000
		Sig. (2-tailed)	.037	.
		N	69	69

*. Correlation is significant at the 0.05 level (2-tailed).

The Relationship between Concentration and Physical Fitness: Implications for Holistic Educational Policy

In the realm of educational policy, these findings suggest that learning concentration impacts not only cognitive domains but is also intricately connected to physical dimensions such as fitness. Recent studies have demonstrated that mindfulness training, which enhances attentional control, can also improve physical health, particularly by reducing cognitive stress and enhancing physical performance (Zhao et al., 2025: 3). Interventions that combine physical activity with mindfulness practices have been found to be more effective in improving both mental well-being and physical fitness than either component alone (Nguyen et al., 2023: 2).

This interrelation may be explained by the tendency of students with higher concentration levels to follow instructions more effectively and to engage more fully in physical learning activities. Such interactions are particularly evident in physical education or movement-based learning contexts that demand sustained focus. Consequently, training programs aimed at enhancing concentration, such as attentional exercises or mindfulness practices can indirectly contribute to improved fitness levels. Policies that integrate both cognitive and physical aspects are thus essential in fostering a holistic approach to education. Programs that simultaneously incorporate physical exercise and attentional techniques have been shown to improve student well-being and cognitive performance (Pickerell et al., 2023: 1075). Periodic evaluations of this relationship are also necessary to accurately measure the effectiveness of such interventions.

For education practitioners, these findings underscore the importance of considering students' concentration levels in both physical and non-physical learning settings. Teachers can facilitate focused learning environments by employing enjoyable and distraction-free approaches. In-class mindfulness practices have been shown to enhance students' tolerance to distractions and improve academic performance through better attentional control (Bordbar et al., 2024: 10). On the students' part, fostering self-awareness about the importance of focus as a core asset for achieving optimal performance is crucial. This awareness can be developed through interactive and reflective pedagogical strategies. The synergy between concentration and fitness offers dual benefits in the educational process. Therefore, teachers, students, and policymakers must collaborate to design and implement programs that cultivate both aspects in a balanced and integrated manner.

The Relationship Between Concentration (X2) and Physical Fitness (Y)

The second analysis reveals a statistically significant relationship between the variable Concentration (X2) and Physical Fitness (Y), with a significance value of 0.034 (< 0.05). The correlation coefficient of 0.233 indicates a positive and unidirectional relationship, which, although not strong, remains meaningful within the context of educational policy. This implies that the higher

the level of concentration as indicated by statement X2, the greater the tendency for students to exhibit higher levels of fitness. This finding supports earlier results that show similar patterns across other concentration indicators.

The presence of this positive correlation points to a meaningful association between mental behaviors and physical outcomes in students. While the strength of the correlation is relatively weak, the finding nonetheless provides an empirical foundation for constructing comprehensive educational approaches. This evidence advocates for the integration of mental and physical development strategies as part of a broader educational framework.

Correlations

			ConsentrationX2	Finess_Y
Kendall's tau_b	Conentration_X2	Correlation Coefficient	1.000	.233*
		Sig. (2-tailed)	.	.034
		N	69	69
	Fitness_Y	Correlation Coefficient	.233*	1.000
		Sig. (2-tailed)	.034	.
		N	69	69

*. Correlation is significant at the 0.05 level (2-tailed).

The policy implication of these findings is the necessity of strengthening concentration development programs that are relevant and contextual to students' lives. Activities that stimulate concentration, such as educational games or attention-based exercises, can be designed to be integrated into the curriculum. This can be part of character education aimed at developing students' non-cognitive aspects. By considering the contribution of concentration to fitness, educational approaches can focus more on the integration of mental and physical aspects. Research findings in elementary schools indicate that how actively students move during physical education classes can predict how motivated they are to learn sports, and this applies to all students regardless of their grades in other subjects (Ingledew & Shephard, 2022: 2). This policy supports the formation of holistic and competitive students in both academic and health aspects. Therefore, policymakers need to formulate strategies that make concentration an important variable in curriculum development.

From the perspective of school implementation, teachers play a crucial role in translating policy into effective learning practices. They can use methods such as visualization and active recall. A study in Malaysia confirms that elements of competition and competence can enhance students' intrinsic motivation and engagement (Toh & Choon Lian, 2024: 91). Teachers can adapt teaching methods that involve focused attention, such as visualization exercises or active recall. On the other hand, students also need stimulation that aligns with their learning styles so that concentration can develop naturally. Involving students in planning activities that require focus can increase their sense of responsibility for the learning process. Regular evaluation of students' concentration abilities and fitness is also important to observe their progress. Synergy among teachers, students, and school management will strengthen the effectiveness of concentration programs in supporting fitness.

Relationship between Motivation X1 and Fitness Y

The third analysis results show that there is no statistically significant relationship between Motivation X1 and Fitness Y, with a significance value of 0.059 (> 0.05). Nevertheless, a positive correlation coefficient of 0.213 still indicates a unidirectional relationship between motivation and fitness. Based on this data, an increase in motivation in statement X1 tends to be followed by an increase in fitness, although this relationship is not strong enough to be considered significant. This finding can serve as an initial indication that motivation still plays a role, even if not statistically proven in this context. Not being statistically significant does not mean it is irrelevant in practice, especially when considering the complexity of human behavior. Therefore, further studies with broader methods or samples are still needed.

Correlations

			MotivationX1	Finess_Y
Kendall's tau_b	Motivation_X1	Correlation Coefficient	1.000	.213
		Sig. (2-tailed)	.	.059
		N	69	69
	Fitness_Y	Correlation Coefficient	.213	1.000
		Sig. (2-tailed)	.059	.
		N	69	69

These findings can be interpreted as a consideration for designing motivation enhancement programs that target students' fitness aspects. For policymakers, these results serve as evaluation material to observe the potential impact of motivation on physical outcomes. Programs that incorporate motivational elements, such as reward systems, can stimulate greater engagement (Ryan & Deci, 2017: 45). Furthermore, motivation-based interventions can increase student resilience in long-term fitness programs (Liu et al., 2021: 112). The integration of affective and physical approaches becomes increasingly important in facing the challenges of 21st-century education. Therefore, flexible and adaptive policies will be more appropriate in anticipating the dynamics of the relationship between motivation and fitness (Nguyen et al., 2022: 78).

Teachers can play a role as facilitators who consistently motivate students in physical activities and other learning. Motivated students tend to show perseverance and enthusiasm in following fitness programs, even if the effects may not be immediately statistically visible (Biddle et al., 2020: 63). A long-term approach is needed, which includes a comprehensive evaluation of changes in motivation and their impact on fitness (Durlak et al., 2019: 204). Parental involvement in supporting student motivation outside of school is also an important factor to consider (Kim & Sheridan, 2020: 312). Therefore, building a motivating school culture is a strategic and sustainable step. Although the data does not show a significant relationship, the practical value of motivation must still be maintained in the educational process (Yeager et al., 2019: 14).

Relationship between Motivation X2 and Fitness Y

The fourth analysis also shows that there is no significant relationship between Motivation X2 and Fitness Y, with a significance value of 0.074 (> 0.05). The correlation coefficient of 0.197 still indicates a weak positive relationship between the two variables. This means that, although not statistically significant, an increase in motivation in statement X2 tends to coincide with an increase in fitness. These findings affirm that the relationship between motivation and fitness is more complex and may be influenced by other factors not yet studied. This opens up opportunities for further research that can explore more specific and relevant dimensions of motivation. Therefore, a multidimensional approach to motivation needs to be further developed in the context of physical education.

Correlations

			Motivation_X2	Fitness_Y
Kendall's tau_b	Motivation X2	Correlation Coefficient	1.000	.197
		Sig. (2-tailed)	.	.074
		N	69	69
	Fitness_Y	Correlation Coefficient	.197	1.000
		Sig. (2-tailed)	.074	.
		N	69	69

These results serve as a reminder that not all forms of motivation directly affect physical outcomes like fitness. The design of motivation programs needs to consider the **type of motivation** (intrinsic vs. extrinsic), the **context of the activity**, and the **meaningfulness of the activity** for students. For example, motivation arising from external pressure may not have a long-term impact on fitness compared to intrinsic motivation (Ryan & Deci, 2017: 45). Therefore, policies that encourage the development of **intrinsic motivation** will be more beneficial in the long run (Liu et al., 2021: 112). Schools also need to adjust their approach based on the diverse characteristics of students. **Participatory and contextual strategies** can help students internalize the importance of fitness more meaningfully (Nguyen et al., 2022: 78). Integrating sustainable motivational principles can strengthen the development of effective and relevant fitness programs.

In practice, teachers can adopt a **personalized approach** to motivating students, recognizing their needs and interests in physical activity. Relevant and enjoyable activities will be more capable of naturally arousing student motivation (Standage et al., 2020: 204). The use of **positive feedback, gradual achievements, and social reinforcement** can help create a conducive learning environment (Ames, 2019: 63). Although the relationship is not yet significant, this approach can build a strong foundation for improving student fitness. Therefore, **strengthening motivation** remains an important part of a holistic student development strategy (Yeager et al., 2019: 14). **Collaboration among teachers, counselors, and parents** will strengthen the impact of motivational approaches on student fitness (Kim & Sheridan, 2020: 312).

CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that the Free Nutritious Eat (FNE) program has a positive impact on various aspects of student learning in Public Middle School (SMPN). Generally, teachers assess that this program is able to increase students' learning concentration, both in terms of sustained focus and absorption of lesson material. In addition, this policy significantly contributes to improving students' physical and psychological conditions, marked by increased cheerfulness, enthusiasm for learning, and physical readiness of students to participate in classroom learning.

However, the influence of the Free Nutritious Eat (FNE) program on accelerating the understanding of lesson material is still not evenly distributed among all respondents, likely influenced by factors such as teaching methods or individual student readiness. These findings highlight the importance of synergy between nutrition programs and improvements in teaching quality and a conducive learning environment. Overall, the Free Nutritious Eat (FNE) program is worth continuing and expanding its coverage with regular evaluation to continuously improve its effectiveness in supporting the quality of national education.

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