IJAMS
INTERNATIONAL JOURNAL OF ADVANCED MULTIDISCIPLINARY STUDIES
Volume IV, Issue 5 May 2024, eISSN: 2799-0664

Nutrition And Academic Achievement Of Filipino Learners in Balutakay Elementary School, East District Of Bansalan

MARIA RACHELLE O. ZUBIAGA
Teacher 1
Rizal Memorial Colleges, Inc.
Master of Arts in Educational Management
mariarachelle.zubiaga@deped.gov.ph

Abstract — This study examined the impact of poor nutrition on the academic performance of elementary learners in Balutakay Elementary School in Managa, Bansalan, Davao del Sur. Its main objective is to identify mitigation policies and measures designed to reduce negative effects of poor nutrition on children's academic performance. Malnutrition remains one of the major obstacles to human well-being affecting all areas of a child's growth and development, including performance in the classroom. The study is grounded in Maslow's motivational and needs theory. In this study, a qualitative phenomenological case study design was used with interviews as data collection instruments to thirty (30) learners purposively sampled. Findings revealed that malnutrition affected physical growth, cognitive development and it consequently impacts on academic performance, health and survival of learners. Malnutrition also deepens poverty due to increased health care costs. The study also established that hungry and undernourished grade seven learners were not able to take on physical work and sporting activities seriously, are less able to attend school and if they do, are less able to concentrate and learn. On the way forward, there is need to introduce nutritional gardens at community, school and at family levels. Addressing the root causes of malnutrition (such as food insecurity, poverty, population growth and socio-economic instability) is imperative for achieving sustained reductions in malnutrition.

Keywords — Malnutrition, poor nutrition, academic performance, nutrients, food, poverty, elementary grades

I. Introduction

Nutrition is an essential part of human life, health and development. It refers to the quality and amount of food intake the body receives. It is the total processes involved in how an organism obtains nutrients and uses them to enable it to work properly. It is one of the basic needs of every individual on earth and not possessing proper nutrition can be terrible. Intake of insufficient amounts of food nutrients may lead to different kinds of illnesses and may turn the bodies weak and disabled. With the advance of technology, fast and processed foods are already prevalent in the world. It is very much a concern to the younger generation especially to learners on how much daily consumption of food nutrition they have. Poor nutritional status is believed to be one of the causes of low productivity in school which affects the academic achievements of the students.

This study focuses on the association of nutrition and academic achievement in the Philippine context. This further aims to create empirical evidence on the impact of nutrition to academic achievement of the Filipino learners.

This study intended to investigate the impact of nutrition to the academic achievement of Filipino learners; and assess the association of nutrition and academic achievement in the Balutakay Elementary School context. How does it affect the learners' academic achievement? What changes can be made to help? By questioning the factors and consequences associated with it, one is better able to understand the importance of a healthy lifestyle through education and modeling and the steps needed to be taken to see the effective changes.

The study is guided by the following questions:

1. What are the experiences of children in their academic life related to nutrition in school?
2. If they have breakfast or lunch, what usually are eaten by children?
3. What are the insights of teachers regarding nutrition and academic achievement of children in school?

According to the study of Dominguez (2019), high malnutrition results in a low school survival rate. This shows that malnutrition is an important factor that affects the ability of a child to stay in school, thereby strengthening the importance of school-based programs that attempt to fight severe child waste. Malnutrition, as predicted, has a negative relationship with cognitive development and educational achievement. This reinforces the role of food in the academic life of a child in such a way that it can either promote or impede growth and development, depending on the quality of the child.

As cited by Aceron and Beredo (2019), Wanjohi (2020) revealed in his study that lack of sufficient food and a balanced diet were the main cause of malnutrition among children in school. Poverty among children was also found to be a root cause of malnutrition. Moreover, Aceron, et. al. (2019), the study of Santanu Ghosh and Haradhan Saha (2020) found that malnutrition had a negative impact on children's academic performance and growth rates. Knowing more about what nutritional deficiencies can lead to, parents should help their children to be successful in the classroom. It indicates that food in the students ' academic performance is of paramount importance.

In the study conducted by Magulod, G. and Capili, J (2019) showed that students' academic achievement is accounted for by healthy eating habits and nutritional status. Moreover, academic achievement of college students is significantly predicted by eating habits and BMI. To predict students ' academic performance, the Body Mass Index (BMI) is found. This indicates that they demonstrate good academic performance when students have a normal body status. The predicted

learning achievement of students would increase with good nutritional status. As cited by Magulod et.al. (2019), the finding further confirms Alatupa, Pulkki-Råback, Hintsanen, Ravaja, Raitakari, Telama, Viikari and Keltikangas-Järvinen (2020); and London & Castrechini (2019) that to predict students' academic performance, the Body Mass Index (BMI) is used. The healthy eating habits of the students, therefore, predict their academic performance. This indicates that students can perform academically if they have good eating consumption.

When students are malnourished, it is not only possible to not grow cognitively, which affects academics, but also physically and psychosocially (Stang & Bayerl, 2020). As a result, poor nutrition can further lead to the problem of infections, diseases, and illnesses. While this is a risk in itself, it also increases the academic threat of failure because the student is forced to miss school to get healthy (Massey-Stokes, 2020). MSNBC (2019) highlighted these claims in obese children. Obese children miss an average of two days more in school per year. In addition, obese students are more prone to serious medical conditions such as asthma, hypertension, Type II Diabetes, anxiety, depression, high blood pressure, and high cholesterol (MSNBC, 2019; Ellerbee, Bramson-Paul, & Marcellino, 2019; U.S. Department of Health and Human Services, 2021). School is important in not only teaching children academic knowledge in tools for their future, it also teaches self-discipline and the importance of self-esteem. The vitality of these areas cannot be ignored because if students are not in school, students cannot grow in these areas either (Sigfusdottir et al., 2019).

The lack of nutrition in students' lives raises questions to determine the impact of various vitamins on the students' achievement. Especially during the development and formative years, the student is growing and changing. When the proper nutrients are not obtained, proper growth and development cannot take place. It is not merely a matter of obesity and "cosmetic" reasons to encourage healthy eating, cognitive functioning is also in jeopardy (Satcher, 2022). Children that lack proper nutrients when growing, perform lower in general academics and specifics such as reading, math, and vocabulary due to possibilities of delayed development (Action for Healthy Kids, 2019).

Many specific nutrients are important in the development of healthy students, physically and cognitively. These include calcium, vitamin A, thiamin, riboflavin, and iron (Goldberg, 2019). However, iron is of the greatest nutrients that affects achievement due to its significance of transporting oxygen to the body to provide energy, influencing the attention span and overall cognitive ability of the student (Massey-Stokes, 2022). Research done by Halterman et al. (2021) determined math scores of iron deficient children scored lower than children with normal iron levels (Taras, 2019).

Additional research has been done to determine the impact of nutritional supplements, such as a multivitamin on the students' lives. While a multivitamin would help students to achieve the Recommended Dietary Allowances (RDA) of vitamin and mineral levels needed to be healthy, there has not been strong evidence to point to the intellectual benefits on student achievement to

encourage the intake of additional supplements that help to meet RDA standards (Taras, 2019; Goldberg, 2019). The position of the RDA is to provide information and policies to people on the most vital nutrients and foods to eat to help supply information on needs for a healthy life by monitoring programs and diets (Goldberg, 2019). Consequently, information must be made available to others to demonstrate the impact of nutrients on achievement and success.

Previous Research Studies about Nutrition and Academic Achievement

In the study between the correlation of the nutritional status and academic performance of the child laborers, good nutritional status and school attendance may prove to have positive effects on the children's academic performance. The data showed that domestic child labor hours, nutritional status and school attendance were positively correlated with academic performance. Furthermore, street vending labor hours was negatively correlated with academic performance (Cardoso et.al., 2019).

In the study of Dominguez (2019) on socioeconomic factors, child malnutrition, maternal health, and academic performance; it was concluded that there is a negative association between high malnutrition and school performance. Moreover, hungry students cannot become fully participative in class. Thus, this condition directly affects their ability to process knowledge, promote attentiveness and may degrade their social skills with teachers and other students.

Aceron (2019) also confirmed that his study showed that eating habits and illiteracy inversely affected academic performance of the students. The researcher concluded that if the nutritional status of the students is improved, then the academic performance will also be enhanced. Hunt (2019) in his study showed that individuals whose diet contains high amounts of fruits and minimal animal products outperformed their peers in all areas. Thus, this study concluded that there is indeed a link between the digestive system and the brain functions of an individual as claimed by Scharffenberg and Walton's (2019).

Alcuizar (2019) said that in his study towards nutrition, living conditions, and academic performance; nutrition turned out to be the most predominant factors of the independent variables studied, which hinders the pupils' academic performance, followed by parents' living conditions. Further, the result of the study showed that the majority of the respondents were underweight, which are generally considered major factors that affect the health status of the pupils. This has been found to be one of the reasons for their poor academic performance and result from NAT.

Magulod (2019) concluded that sex, weekly allowance, and parents' education spelled differences on the respondents' BMI. Academic achievement and healthy eating habits are found to be correlated. Lastly, healthy eating habits and BMI significantly predicts the academic achievement of college students. Hence, development of educational interventions focusing on students' awareness on healthy food intake will encourage them to have a better practice of healthy eating habits and a better academic performance.

Malnutrition is the largest health problem of children in developing countries. The Global Nutrition Report said every country except China had crossed a "malnutrition red line," suffering from too much or too little nutrition. In India, approximately 60 million children are underweight, and malnutrition is responsible for 22% of the country's burden of disease (Miles, 2019). A recent survey says that around a third of school children in the Philippines are undernourished, according to the Food and Nutrition Research Institute (FNRI). The charity Save the Children found that one in every four Filipino children sometimes skip meals and as many as 1.5 million children live a whole day without even a single meal. The Department of Education also reveals that as many as 1.8 million children in the country suffer from "severe malnourishment." The prevalence of malnutrition among the poor and the vulnerable is extremely high. These findings reflect the number of Filipino Families who live in extreme poverty (Chinyoka & Naidu, 2019).

During the first quarter of the School Year 2017 - 2018, Pag – asa National High School analyzed student's health status to identify who among the students are undernourished. Based on the Body Mass Index of eight hundred seventy-nine (879) students from Grade 7 to Grade 10, ninety-seven (97) of them are categorized wasted/severely wasted or below normal BMI, out of which are thirty-six (36) Grade 8 Students. Based on the interview and upon studying their profile, most of them belong to low-income families (Conell, 2020). The School Feeding Program based from the previous school records improves the nutritional status of the students after several months of implementation, where most students from Grade 7 to 10 with wasted/severely wasted BMI were escalated to normal, but it is still very relevant to determine the causes of malnutrition to minimize its effects, suggest possible solutions, and to assess its impact on the academic performance of the students (Ecker & Nene, 2019). "Undernutrition is behind the high drop-out rates in elementary and high schools," said Jun Arajo, Health, and Nutrition Center, Department of Education. “If the trend continues in the coming years, then it will have a great impact on employment rates in the country, and the economy will suffer." In response, the Philippine government intensified a feeding program to address the problem of undernutrition among public school students and translate this to a better learning outcome, reduced drop - out and improved school retention rate (Nabarro, 2019). Through DepEd Order no. 43 s. 2011 entitled Strengthening the School Health and Nutrition Programs for the Achievement of the Education for All (EFA) and Millennium Development Goals (MDGs), former Education Secretary Armin Luistro said that the department is strengthening its school health and nutrition programs, aligning it with other existing activities to come up with one seamless whole (DepEd Order no. 43 s. 2011). As revealed by various researches, when it comes to the learning process, well-nourished students perform better or doing an excellent performance in reading and arithmetic as compared to undernourished children. Thus, nutritional status may affect the academic standing of the students (DO No. 51, s. 2016).

Wanjohi (2020) in his study revealed that the main cause of malnutrition among children in the zone was the lack of enough food and a balanced diet. Poverty also was found to be one root cause of malnutrition among children (Aceron, 2019). On the effects, the study revealed that

malnutrition had a negative impact on the academic performance and growth and development rate of children. Malnutrition is generally defined as a chronic condition which is a consequence of over- or under-consumption of any or several essential macros- or micronutrients relative to the individual's physiological and pathological requirements according to (Ecker & Nene, 2019). Malnutrition is also a dangerous condition that develops when your body does not get enough nutrients to function properly. Poor nutrition can be caused by a lack of food or an unbalanced diet that's missing or insufficient in one or more nutrients (Chinyoka & Naidu, 2019). A study by Connell (2020) revealed that 34 percent of low birth weight children were either repeating grades or placed in special education classrooms while only 14 percent of normal-birth-weight children experienced the same outcomes (Asigbee, Whitney, & Peterson, 2019). Knowing more about what nutritional deficiencies can lead to, regarding academic performance, parents should help their children feed adequately to succeed in class as mentioned by Santanu Ghosh and Haradhan Saha (2020). This shows that nutrition is of paramount importance in the academic performance of the students. In order to develop a thorough understanding and deeper insights relevant to this proposed study, the proponent considered the K to 12 Health Curriculum which aims to assist the Filipino Learner in attaining, sustaining, and promoting life-long health and wellness wherein the learning experience through the program provides opportunities for the development of health literacy competencies among students and to enhance their overall well-being (DepEd Order no. 43 s. 2011).

The researcher also considered the DO No. 51, s. 2016 - Implementation of the School-Based Feeding Program for School Year 2016 - 2017, which states that the Department of Education (DepEd), through the School Health Division-Bureau of Learner Support Services (SHD-BLSS), shall implement the School-Based Feeding Program (SBFP) for School Year (SY) 2016 - 2017 to address undernutrition and short-term hunger among public school children. The program primarily aims to improve the nutritional status of the beneficiaries and secondarily, it aims to increase classroom attendance by 85% and improve the children's health and nutritional values and behavior (DO No. 51, s. 2016). High school students who belong to low - income families failed to attend classes regularly because of hunger or poor nutritional status. This situation affects the academic performance of those students because of not having the ability to give focus and concentration in their studies. Thus from the above study and analysis of the data generated, it revealed that the nutritional status of the student has a definite relationship with his/her academic achievement.

The theory for this study was anchored on Motivation Theory by Abraham Maslow. Maslow's theory of needs was based on a hierarchical model where basic needs at the bottom and higher needs at the top (physiological, safety, love, esteem, cognitive, aesthetic, self – actualization and transcendence needs). The main point in Maslow's Hierarchy of Needs is that people need to satisfy their needs systematically starting with the basic needs of moving up the hierarchy. He believed that the higher level needs could only be achieved if the lower order needs have been

satisfied first. For example, a student who is hungry is not likely to be motivated to self-actualize until his hunger is satisfied.

This study is also guided under DepEd Order No. 23 s. 2020, the Guidelines on the Implementation of School Feeding Programs (SFPs) for the School Year 2020-2021. The Department of Education implements the School Feeding Programs (SFPs) to address the undernutrition problem among the learners to improve nutritional status and encourage learners to enroll despite the pandemic. It also aims to 'increase the number of School-Based Feeding Beneficiaries and increase the number of partnerships with the stakeholders. The implementation of the School-Feeding Program is in line with the Basic Learning Continuity Plan (BE-LCP), a package intervention that will respond to the basic education challenges brought about by COVID-19. This serves as a modification in the Department of Education in the design of learning delivery strategy and operational directions that prioritize the welfare of the learners, teachers, and personnel under the department. It is believed that education and learning depend on good nutrition.

Thus, this study proposed that a hungry student is one that has difficulty in learning due to his nutritional imbalance. Nutrition and the proper way of getting nutrition is an important and vital part of the students' academic achievement. The learning process is affected when nutrition is low among students. The brain cannot work properly and inner feelings of hunger, isolation and insecurity will always be on the students' mind.

II. Methodology

The study is qualitative in approach with the use of content analysis through interviews to collect the data. The research design was the best approach to gather a wealth of information to investigate the relationship between food consumed at school and academic achievement among learners of the elementary site. For the design of this research, all the factors that may affect academic performance must be taken into consideration in order to get a true estimation of the program being studied. This design strives to accomplish that task, and give a descriptive estimation of the effect.

The participants in the study include elementary learners of Grade 4 to 6 ranging in age from 9 to 14. The students participating were taken from these higher grades because these learners are more talkative, friendly and sociable as compared to the lower grades who are timid, shy, and less motivated to participate in the study. Ten (10) learners from each of these three (3) grades were chosen to participate in the study for a total of 30 learners. The students came from an elementary school in Balutakay Elementary School in Managa, Bansalan, Davao del Sur. This school was chosen, since it is my own school, and has a diverse population of students.

The researcher used the qualitative-descriptive with the use of interview research method, employing an interview questionnaire in gathering data. Quota sampling was employed in this

study. The researcher used other faculty members of the RMC graduate school through validation of criterion method to test the reliability of the interview questionnaire. The interview questionnaire was administered to thirty (30) participants of the study.

This study used content analysis to analyze and interpret the data emanating from the responses of the participants. The use of content analysis is further explained in the next section.

III. Results and Discussion

Experiences of children in their academic life related to nutrition in school

The following are experiences of children related to nutrition and their academic life: *effects on schooling/cognitive development; and health challenges caused by poor nutrition.*

Usually eaten by children for breakfast or lunch

Filipinos tend to lack imagination when it comes to breakfast. The vast majority of the learners start their days with cold porridge (l*ugaw*) — and those of us with children are more likely to cook the kinds with the most sugar. Children all over the world eat *lugaw* (or pan de sal), but in many places they also eat things that would strike the average Filipino palate as strange, or worse.

Insights of teachers regarding nutrition and academic achievement of children in school

Nutrition Affects Health of Learners. Nutrition initiatives uphold food security and safety by ensuring the availability of and access to safe and nutritious food for kids. In many instances, nutrition sources food from local producers who are only allowed to supply food stipulated by dieticians and adhere to strict food safety requirements (Wan Manan, et al., 2019).

Education is Dictated by Nutrition. Nutrition combines health with education benefits such as increasing school enrolment and attendance and improving academic performance.

Nutrition is a Tool for Socialization. Nutrition has served as a tool for social inclusion (Tembon, et al., 2019). One example requires children of different tribes to sit together and share common meals.

Local agriculture. Nutrition promotes local agricultural production (Wan Manan, et al., 2019). Linking nutrition to local producers is termed ‘home-grown nutrition’, and helps to stabilize markets, increases (and guarantees) farmers’ incomes and promotes the production of healthy food.

Local community. Nutrition also benefits communities by reducing households’ food expenses, consequently increasing their disposable incomes (Alderman & Bundy, 2019). With children fed in school, families better manage their finances.

Discussion

The nutritional health problems of the deprived school children included hunger, unsafe water, intestinal worms, urinary tract infections and malaria. The older boys and girls who are from 11 to 15 years old were undernourished than younger children with impediments to cognition and physical work capacity, night blindness and impaired vision, absenteeism due to illness, tiredness and irritability. The improvement consisted of deworming and vitamins; A dosing twice a school year, etc. Other causes of poor nutrition are; lack of adequate food, poor food distribution program and overpopulation.

Poor nutrition hampers academic achievement

Study demonstrated by Nutrition and Academic for kids in a New York study, many learners experienced malnutrition that was too slight for clinical signs yet still affected their intelligence and academic performance. This impairment can be corrected through improved nutrition. Among fourth grade learners, those having the lowest amount of protein in their diet had the lowest achievement scores. Iron deficiency anemia leads to shortened attention span, irritability, fatigue and difficulty with concentration.

Consequently, anemic children tend to do poorly on vocabulary, reading and other tests. Children who suffer from poor nutrition during the brain's most formative years score much lower on tests of vocabulary, reading comprehension, arithmetic and general knowledge (Action for Health Kids, 2019)

Learners' inability to learn due to poor nutrition

According to Medford (2019), the relationship between nutrition and the ability to learn is clearly established. Malnutrition can restrict brain development resulting in impaired learning and cognitive functioning. Recent research provides compelling evidence that under nutrition even in its milder forms can have detrimental effects on the cognitive development of school children. Mild to moderate poor nutrition can result in nutrition deficiencies the most common of which is anemia. Anemia can affect lethargy, lack of concentration and depending on the severity impair cognitive development; anemia also lead to increased susceptibility to infectious disease.

Malnutrition causes death and impairs the growth and development of millions of children. Poor nutrition disrupts growth and weakens the mental development of children producing less healthy and less productive adults. For example, protein-energy malnutrition (PEM) affects about 200 million children worldwide. This has recently risen in African and South-East Asia. Iron deficiency affects approximately 200 million people in the developed countries. Vitamin A deficiency puts 250 million children worldwide at risk of blindness while Iodine deficiency is estimated to affect over 800 million people worldwide. Over 40 million people are affected by some degree of Iodine deficiency related brain damage. Iodine deficiency causes mental retardation, delayed motor development, stunted growth, speech and hearing defects (Galal, 2019).

Even moderate undernutrition can have lasting effects and compromised cognitive development and school performance. All these effects of poor nutrition comprise of learners' attendance and affects academic performance at school. Other effects of poor nutrition are death, heart disease, cancer, stroke, liver disease, diabetes, osteoporosis, abnormal rarefaction of bone state, arteriosclerosis (abnormal narrowing and hardening of fatty vessels), obesity and so on. As observed by EPP rights (1964), poor nutrition is to be associated with high death rate and low experiences of life. High mortality in infancy and early childhood disease and among women during the child bearing period increase susceptibility to many diseases such as tuberculosis and impaired walking capacities.

Who is responsible for poor nutrition?

Adequate nutrition is necessary if children are to become fit and productive adults, able to fulfil their responsibility in school. According to Richard (2021), it is widely recognized that a child's academic achievement is the product not only of the quality of school the child attends but also of the education and educational preparation the child has received outside the school in the family, community and from peers. A predisposition to learn can be enhanced by environmental conditions, whether a child is well nourished, as appropriate health care and has other physical necessities for learning e.g. stable housing that provides a place to study.

There are so many people who are responsible for the problems/causes of poor nutrition. The individuals, parents, schools and the government are involved (Richard, 2021);

The Individual. Learners lack the knowledge of nutrition and so they eat what they like and what their parents can afford. These and their lifestyle predispose them to poor nutrition as increasing knowledge is not enough. Learners need to know how to select healthier food and how to prepare it, especially those in the hostel (Fleck, 2019).

Parents. There is also a need to direct parents as to the type of help they could give/offer to their children. Some parents (especially mothers) do not care whether their children eat or not while some do not bother about what their children eat. The parents also lack the knowledge of nutrition and offer anything to their children to eat. The emphasis is that "provided the stomach is filled". This leads to their being responsible for the problem of learners' poor feeding or nutrition (Umukoro, 2019).

Schools. In educational research and policies, most educators, researchers and policy makers assumed that schools are the primary determinants of learners' achievement and that the influence of families, communities, peers and brother social forces are only modifiers (Richard, 2021).

The school is where many things are supposed to be learnt; nutrition education has been shown to have a significant effect in fostering healthy eating habits. Schools contribute to increasing nutrition problems by not defining a comprehensive health education curriculum for the

teaching of the bases and by not monitoring what is sold to the learners as food during break in school.

Government. According to Tanner (2019), malnutrition is a major contributory factor to poor academic performance of school children in the developing world as a result of poverty or poor dietary decisions made by their parents due to inadequate nutritional knowledge. In addressing the reason for this, he stated that local, state and federal/national leaders (government) have not paid adequate recognition to the importance of good nutrition; there is lack of adequate food and poor distribution programs. Government political instability has also contributed to the problem as policies geared at addressing this problem over the years in various countries are usually abandoned as soon as there is a change in regime.

IV. Conclusion

After assessing the impact of nutrition and exercise on academic achievement, it is evident to see the value and need to provide assistance to learners affected by the primary causes of poor nutrition. One's nutritional lifestyle affects the cognitive function and development level,influencing the academic achievement, school attendance, self-esteem, health risks, and weight of the student. Many factors such as knowledge, resources, environment, nutritional choices, and income contribute to the resulting figures.

Since many studies have been performed to determine the needs that must be met to address these issues, knowledge has been established to understand changes need to be made in the school system to provide learners with healthy meals, physical activity, and the knowledge to teach learners to make healthy decisions for themselves. When areas as such are addressed, learners' test scores and performances within the classroom will be attained, levels of cognitive functioning will result, and developmental areas will be met. As made evident in this paper, the better the health and habits of learners, the more successful learners will be academically and in their overall lives (Sigfusdottir et al., 2019). No matter the realm, when learners experience success, it will breed success.

REFERENCES

[1] Dominguez, V. A. H., & Halili, B. L. B. (2019). Food for Thought: The Socioeconomic Impact of Child Malnutrition and Maternal Health on the Academic Performance of Filipino School Children. European Journal of Sustainable Development, 7(4), 361-371. Retrieved from https://tinyurl.com/qvyxkfp indexed by Google scholar
[2] Beredo and Aceron. (2019). Nutritional status and its impact on academic performance of selected grade 8 students. Journal of Physics: Conference Series, 1254 issue 1, pages 12 - 13. doi:10.1088/1742-6596/1254/1/012013.
[3] Santanu Ghosh and Haradhan Saha (2020). The role of Adequate Nutrition on Academic Performance of College Students in North Tripura. The Online Journal of New Horizons in Education. From https://www.tojned.net/journals/tojned/articles/v03i03/v03i03-05.pdf
[4] Magulod, G. and Capili, J (2019). Anthropometric Status and Eating Behavior as Predictors of University Students' Academic Achievement. Asia Pacific Journal of Multidisciplinary Research, 7(2). Retrieved from https://tinyurl.com/vf3haqg indexed by International Scientific indexing
[5] Alatupa S, Pulkki-Råback L, Hintsanen M, Ravaja N, Raitakari OT, Telama R, Viikari JS, Keltikangas-Järvinen L. (2020). School performance as a predictor of adulthood obesity: a 21-year follow-up study. Eur J Epidemiol. 2020 Apr;25(4):267-74. doi: 10.1007/s10654-010-9428-6. Epub 2010 Feb 4. PMID: 20130965.
[6] London, R. A., & Castrechini, S. A. (2019). A Longitudinal Examination of the Link between Youth Physical Fitness and Academic Achievement. Journal of School Health, 81, 400-408.
[7] https://doi.org/10.1111/j.1746-1561.2011.00608.x
[8] Stang, J. & Bayerl, C.T. (2020). Position of the American dietetic association: Child and adolescent food and nutrition programs. Journal of the American Dietetic Association. 103, 887-993
[9] Massey-Stokes, M. (2020). Adolescent nutrition: Needs and recommendations for practice. The Clearing House, 75 (6), 286-291.
[10] Ellerbee, W.J., Bramson-Paul, P. &, Marcellino, S. (2019). Healthy children ready to learn. Leadership, 35, 26-29.
[11] Sigfusdottir, I.D., Kristjainsson, A.L., & Allegrante, J.P. (2019). Health behaviour and academic achievement in Icelandic school children. Health Education Research, 22, 70-80.
[12] Satcher, D. (2022). Healthy and ready to learn. Educational Leadership, 63, 26-30.
[13] Goldberg, J.P. (2019). The recommended dietary allowances: Can they inform the development of standards of academic achievement. Applied Measurement in Education, 11, 97-105.
[14] Halterman, J.S., Kaczorowski, J.M., Aligne, C.A., Auinger, P, & Szilagyi, P.G. (2021). Iron deficiency and cognitive achievement among school aged children and adolescents in the United States. Pediatrics, 107, 1381-1386.
[15] Taras, H. (2019). Nutrition and student performance at school. Journal of School Health, 75(6), 199-213. doi:10.1111/j.1746-1561.2005.tb06674.x
[16] Cardoso, M. D., & Casiño, J. M. (2019). Child Labor, Nutritional Status, and Academic Performance of Filipino Children. US-China Education Review, 5(9), 604-612. Retrieved from https://tinyurl.com/w83ocu9 indexed by International Scientific indexing
[17] Dominguez, V. A. H., & Halili, B. L. B. (2019). Food for Thought: The Socioeconomic Impact of Child Malnutrition and Maternal Health on the Academic Performance of Filipino

School Children. European Journal of Sustainable Development, 7(4), 361-371. Retrieved from https://tinyurl.com/qvyxkfp indexed by Google scholar

[18] Aceron, A. (2019, November). Nutritional Status and Its Impact on Academic Performance of Selected Grade 8 Students. In Journal of Physics: Conference Series (Vol. 1254, No. 1, p. 012013). IOP Publishing. Retrieved from https://tinyurl.com/s8pm9ag indexed by Scopus

[19] Hunt, J. G. (2019). Diet and Academic Performance. In International Forum (Vol. 18, No. 2). Retrieved from https://tinyurl.com/qvyxkfp indexed by International Scientific Indexing

[20] Scharffenberg, J., Walton, J., Walton, L. (2019). You can live six extra years. Santa Barbara, CA: Woodbridge.

[21] Alcuizar, R. M. (2016). Determinants of low academic performance for pupils in upland barangays, Iligan City, Philippines. International Journal of Physical Education, Sports and Health. Retrieved from https://tinyurl.com/ucndabj indexed by Copernicus international

[22] Magulod, G. and Capili, J (2019). Anthropometric Status and Eating Behavior as Predictors of University Students' Academic Achievement. Asia Pacific Journal of Multidisciplinary Research, 7(2). Retrieved from https://tinyurl.com/vf3haqg indexed by International Scientific indexing

[23] Miles JH.(2019). Autism spectrum disorders--a genetics review. Genet Med. 2019 Apr;13(4):278-94. doi: 10.1097/GIM.0b013e3181ff67ba. PMID: 21358411.

[24] Chinyoka and Naidu (2019) Impact of Poor Nutrition on the Academic Performance of Grade Seven Learners: A Case of Zimbabwe, retrieved from https://pdfs.semanticscholar.org on August 17, 2017

[25] Conell (2020). Nutrition and Student's Academic Performance, retrieved from https://www.wilder.org on September 10, 2017

[26] Ecker and Nene (2019) Impact of Poor Nutrition on the Academic Performance of Grade Seven Learners: A Case of Zimbabwe, retrieved from https://www.researchgate.netpublication on August 17, 2017

[27] Nabarro et al. (2019) Nutrition Policies in Developing Countries retrieved from https://agritech.trau.ac.in.nutrition on August 17, 2017

[28] Wanjohi, Anthony M., (2020). Factors Affecting the Sustainability of School Feeding Program Among Pre-Schools in Magadi Zone, Kajiado District of Kenya (August 25, 2010). Available at SSRN: https://ssrn.com/abstract=1665013

[29] Aceron, A. (2019). Nutritional Status and Its Impact on Academic Performance of Selected Grade 8 Students. In Journal of Physics: Conference Series (Vol. 1254, No. 1, p. 012013). IOP Publishing. Retrieved from https://tinyurl.com/s8pm9ag indexed by Scopus

[30] Asigbee, F. M., Whitney, S. D., & Peterson, C. E. (2019). The link between nutrition and physical activity in increasing academic achievement. Journal of School Health, 88(6), 407-415. Retrieved from https://tinyurl.com/utmowcy indexed by Google Scholar

[31] Santanu Ghosh and Haradhan Saha (2020). The role of Adequate Nutrition on Academic Performance of College Students in North Tripura. The Online Journal of New Horizons in Education. From https://www.tojned.net/journals/tojned/articles/v03i03/v03i03-05.pdf

[32] Wan Manan Wan Muda, Jomo Kwame Sundaram, & Tan Zhai Gen. (2019). Addressing Malnutrition in Malaysia. Khazanah Research Institute, Kuala Lumpur.

[33] Tembon, A.C., Schultz, L.B., & Fernandes, E. (2019). School feeding: A tool for social inclusion. World Bank Blogs. http://blogs.worldbank.org/education/school-feeding-tool-socialinclusion (accessed 01.24.20)

[34] Alderman, H., & Bundy, D. (2011). School Feeding Programs and Development: Are We Framing the Question Correctly? World Bank Research Observer 27 (2): 204–21.
[35] Medford, M. A. (2019); Tufts University School of Nutrition. Retrieved on 24th June, 2014 from www. outfi.iture.org/ project
[36] Galal, O. (2019); Nutrition Bulletin. Vol. 28, No. 1. California: Blackwell Publishers. https://dutable.com/2019/02/22/poor-nutrition-and-its-effects-on-learning-ability-of-children/
[37] Richard, R. (2021); Improve Students Learning. Retrieved on February, 2022 from www. outfture.org/project. https://dutable.com/2019/02/22/poor-nutrition-and-its-effects-on-learning-ability-of-children/
[38] Fleck, H. (2019); Introduction to Nutrition. New York: Macmillan. https://dutable.com/2019/02/22/poor-nutrition-and-its-effects-on-learning-ability-of-children/
[39] Umukoro, J. O. (2019); Parents Supreme Duty and the Society. Lagos: Jaja Press Limited. https://dutable.com/2019/02/22/poor-nutrition-and-its-effects-on-learning-ability-of-children/
[40] Tanner, B. K. (2019); What Role Should Government Play in Malnutrition? Expert Journal Report at Journal of Paediatric Medicine 2012; 312(5): 321-24.

AUTHOR'S PROFILE

MARIA RACHELLE O. ZUBIAGA

The author is a 32-year-old educator single, born on March 5, 1992 at Digos City Davao del Sur Philippines and a certified dog lover. She is currently living in Digos City Davao del Sur. She is the eldest among two children. She graduated with a Bachelor's Degree in Elementary Education at Cor Jesu College in 2012. In the same year she took and passed the licensure examination for teachers. She also earned units of Early Childhood Education at Rizal Memorial Colleges year 2013. She joined the Department of Education in 2013 and was assigned at Lalon Elementary School, Malita South District Sitio Lalon, Barangay Little Baguio Malita Davao Occidental. At present, she is teaching at Balutakay Elementary School, Bansalan East District, Bansalan Davao del Sur.

Currently, she is Grade- II Teacher at Balutakay Elementary School. In the pursuit of greater opportunities physically, mentally, personally and professionally, Maria Rachelle is presently completing her Master's Degree in Educational Management at the Rizal Memorial Colleges. She is the ESP and Kawan Coordinator in their School. Finally, Maria Rachelle is looking forward to the greater opportunities that God has prepared for her and her sister.