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Effects of hunger on the realization of the UN SDG 4 and the FCUBE of Ghana: A review.

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ABSTRACT

The UN Sustainable Development Goals begin with education. Thus, the SDG 4 (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) aims to empower and emancipate all humanity from the persistent and contemporary social problems. However, hunger, which is a UN Sustainable Development Goal (SDG) 2 (Eradication of Hunger/ Zero Hunger) aims to end all forms of hunger and malnutrition by 2030, is very high among the less privileged (poor, orphans, women, and school children) worldwide. Therefore, one of the critical goals to consider in the achievement of the SDG 4 for the total SDGs realization is the challenges hunger poses to these synergies. The aim of this review is to highlight prevalence rate of hunger among pupils, what teachers and hungry pupils perceive as barriers to adequate food availability or supply, ways or how pupils overcome (cope) with hunger, and how teachers and pupils perceive the impact of hunger on their academic performance. 30 relevant published research articles in peer-reviewed journals were reviewed (content analysis), in addition to ten interviews from teachers and pupils respectfully. Findings reveal that food is a necessity and motivation for learners. However, a very high number of learners globally experience hunger. Also, poverty, poor infrastructure, high rainfall, weak credit access, low technological knowhow and low educational status are some barriers to adequate, available, accessible and sustainable food supply to learners. Therefore, hunger reduction could be achieved through sustainable improvement of standard of living because educational performance is highly associated with the socioeconomic background of learners. Learners who are hungry for food perform poor academically.

1.0 Introduction

The establishment of the Sustainable Development Goals is among the world's greatest decisions of the twenty-first century (SDGs). With the SDGs, we have a fantastic chance to improve the lives of millions of people, solve pressing social issues, strengthen international security, and most importantly, create the world that we want. The Global Goals were created with Agenda 2063 for Africa in mind. For national, regional, and global peace, prosperity, and stability, it is crucial to achieve these global goals since they will benefit people, the environment, and the climate [1]. Despite the importance of education in treaties, covenants, and accords, the international community has not yet fully acknowledged how hunger affects education, even though education has the potential to be a driver of development. The focus on universal primary education by the majority of African countries is what has caused the dramatic increase in primary school enrolment rates [2].

However, due to the requirement for school-age children from low-income households to frequently labour in farms or care for their younger siblings while their parents are at work, the rate of school attendance is still low. Additionally, short-term hunger allows kids to skip school since hungry students find it difficult to concentrate in class [3]. Since 2000, the average numbers for hunger and nutrition have decreased globally. However, given the rise in the number of people experiencing severe hunger from 80 million in 2016 to 124 million in 2018, mankind faces deep-seated divisions [4]. This violates people's right to dignity. The prevalence of undernourishment, child stunting and wasting, child mortality, and poor educational outcomes and experiences are all factors that contribute to the very high rates of food insecurity that African countries continue to experience. These factors are also reflected in low food availability, access to food, poor nutrition, and instability of the food supply. Africa south of the Sahara is home to all ten of the world's highest under-five mortality rate countries, seven of which are categorized as fragile states [4]. Every part of life is fundamentally based on food and nutrition, which also directly supports our health and wellbeing. Life and all potential for human growth require adequate nourishment. International law recognizes the right to food, although it is not yet widely practised [5]. Although there is enough food to feed everyone on the planet, not everyone has enough to eat. Around 11% of people worldwide continue to struggle with widespread hunger, malnutrition, and limited access to food. Wom-

en and children, who are particularly at risk and prone to food poverty and hunger, have received more attention from policymakers. SDG 2 consolidates and concentrates this policy development towards the universal realisation of the right to food by focusing on eradicating hunger, establishing food security, enhancing nutrition, and supporting sustainable agriculture. The Sustainable Development Goals (SDGs) of the UN are an international call to action to eradicate poverty, safeguard the environment, and guarantee that everyone may live in peace and prosperity. The SDGs, sometimes referred to as Agenda 2030, were adopted by the UN General Assembly in 2015. All UN Members approved them, and 2030 was established as the timeframe for accomplishing them. Food security was established at the 1996 World Food Summit as being present "whenever all people at all times have access to enough, safe, nutritious food to support a healthy and active life" (Food and Agriculture Organization [6]). The UN Food and Agriculture Organization (FAO) includes four key aspects of food security into its working paradigm. These include food availability in terms of total production; a person's access to food as determined by economic and/or physical factors; food utilization, such as preparation, eating, and dietary practices; and the stability of access across time, for instance, people or communities having access to food all year round [6].

Additionally, access to enough food that is nutritious and safe is closely linked to improved health (SDG 3) and high-quality education (SDG 4) [7]. SDG 2 (Millennium Development Goal 1) sought to reduce the percentage of people who experience hunger by half between 1990 and 2015. Mixed results were achieved in this direction. The UN MDG Report states that although there were still 870 million people going hungry, the global percentage of undernourished people reduced from 23.2% in 1990–1992 to 14.9% in 2010–2012 [8]. Data since the SDGs' introduction has showed that the worldwide fight against hunger has made headway in recent years, but that trend is currently reversing. According to a 2019 FAO report, sub-Saharan Africa has the greatest rates of hunger, totaling 821 million people [7]. The globe is currently dealing with an increasing number of crises, such as unstable commodity prices, rising food and energy costs, catastrophic weather occurrences, and the danger of contagious diseases. The progress made in eradicating hunger and food insecurity is at jeopardy due to these crises [9].

The World Bank estimates that 66 million children in primary school, 23 million of whom live in Africa, are undernourished. In addition, 75 million children who are old enough to attend school are not, with 47% of them living in sub-Saharan Africa [10]. Without improving school or student feeding systems and concurrently raising school enrollment and performance, eradicating hunger by 2025 would not be possible. The programme has been legally endorsed by Benin, Côte d'Ivoire, Ghana, Kenya, Mali, and Nigeria, and these countries are putting it into practice to guarantee food and nutrition security for students [10]. By enabling simultaneous access to food and education, the project improves the lives of millions of people, particularly children and girls. It also supports the output and market access of smallholder farmers. The continent has made some progress towards reaching Zero Hunger, but it has been gradual and slowed down by a number of obstacles. The 2030 Agenda's SDG 2 on attaining Zero Hunger, which is a must for accomplishing all other SDGs, depends on the food and agricultural industries [11]. According to [12] report on The State of Food Security and Nutrition in the World shows that despite numerous attempts to attain food security and nutrition, global hunger is once again on the increase and has reached levels last seen more than ten years ago. There has been little success achieved in combating the many types of malnutrition, such as undernutrition, micronutrient deficiencies, overweight, and obesity. More than 820 million people throughout the world were undernourished in 2018, up from 804 million in 2016. 256 million of these people reside in Africa.

The 2018 Global Hunger Index (GHI) indicates that the situation in West Africa is equally dire; even Nigeria, which contributes between 60 and 70 percent of West Africa's GDP, has alarming hunger statistics, and Ghana also has significant disparities in the rate of poverty, hunger, and undernourishment. Violent wars, political unrest, extreme poverty, and climate change all serve to exacerbate the troubling reality of hunger and undernourishment. All of these factors have boosted migration both inside and beyond borders, which in certain circumstances has made the hunger problem worse. Hunger and food insecurity are particularly common in rural regions, the expansive urban informal sector, and among the working poor inside nations, notably in West Africa. Women, children, the elderly, people with disabilities (PWDs), fisher people, indigenous people, refugees and migrants, and the rural poor are among socioeconomic groups that are much more severely affected by

hunger. This reality reflects the persistent disparities in society's social, economic, and political realities [13]. Since the World Food Conference in 1996, there has been a great deal of focus on the issues of hunger, under-nutrition, malnutrition, and food insecurity at the international and regional levels. This has been reflected in the work of the UN Special Rapporteur on the Right to Food, the MDGs, the FAO Committee on Food Security, the Sustainable Development Goals, the ILO Decent Work Agenda, the African Union Agenda 2063, and the work of ECOWAS and other Regional Economic Commissions (RECs). Overall, it is acknowledged that access to food is a fundamental human right. However, moderate or severe stunting, a symptom of chronic malnutrition and the primary factor in more than a third of child fatalities worldwide, affects one in every four children under the age of 5. Poor nutrition has an impact on the brain development and academic performance of those children who make it to adulthood [13]

According to [13], 85–95 percent of West Africans who are employed labour informally and get pitiful wages that are insufficient to cover basic requirements like food and other necessities of existence. He said that the number of individuals experiencing food insecurity has grown over the past ten years, demonstrating that the region's availability to food for women, men, and children is far behind the rate of population growth. Rural regions have a higher prevalence of hunger in large part due to the following factors: poverty, inadequate access to land and credit, low and improper technology usage, bad infrastructure, unfavourable input and produce markets, poor health and educational level. All of these factors play a role in the poor social and economic production and productivity. The problem is made worse by market dynamics that, as a result of the unfair/unfairly biased terms of trade between rural produce and urban products, systemically assure wealth transfer from the rural population [13].

In all situations, more than 70% are vulnerable in the sense that they are self-employed or family employees with subpar working circumstances. Particularly, they put in a lot of labour and receive meagre pay, which leaves them unable to meet their basic necessities for food and other forms of support. Ghana's Zero Hunger Strategic Review was a nation-led, inclusive process with participation from all necessary parties. The assessment has created a baseline that encourages shared knowledge of the obstacles and gaps in the country's

response to food and nutrition security, resulting in shared agreement and consensus on the top priorities needed to achieve United Nations Sustainable Development Goal 2. (SDG 2). By 2030, SDG 2 seeks to "ensure food security and enhanced nutrition while promoting sustainable agriculture" [15]. From a brief physical sense of pain or discomfort to a persistent food scarcity and a severe, life-threatening lack of food, hunger spans a wide spectrum. A person experiences hunger when they are unable to consume enough food to fulfil their basic nutritional requirements in terms of both macro and micronutrients over an extended length of time. Hunger and malnutrition still exist in many regions of Ghana, particularly the Northern, Upper East, and Upper West Regions, as well as numerous rural and peri-urban communities throughout the country-state. These conditions could deteriorate further due to the lack of food availability, accessibility, affordability, stability, and utilisation in these regions. The continued use of unsustainable food production methods across the nation is a contributing factor in this. There are still 1.2 million starving Ghanaians. Since there is a lot of misinformation regarding "hidden hunger" or micronutrient deficiency, other people may also be hungry without realizing it [15].

Therefore, the SDG 2 (No Hunger) was covered by the Ghanaian government's national development strategy under both social and economic development. Some regions of the nation continue to experience hunger and malnutrition [1]. In Ghana, 60% of the population is under 25. 35.9% of the population is under the age of 24, and 56% of them reside in cities. Ashanti (20.2%), Greater Accra (17.9%), Eastern (11.4%), and Western (11.0%) are the four areas with the highest concentration of youth. The rates of transition to senior school and postsecondary education are low. SDG 1 (No Poverty) has synergistic relationships with all the other SDGs, but particularly with SDG 2 (Zero Hunger), SDG 3 (Good Health and Wellbeing), SDG 4 (Quality Education), SDG 6 (Access to Quality Drinking Water), and SDG 7 (Affordable and Clean Energy) because of the multidimensional nature of these goals. This was revealed by the Ghanaian Voluntary National Review process (VNR, 2019). The SDG2 (No Hunger) performance indicator for Ghana is listed in the 2022 Sustainable Development Report as a "serious issue with stalling trend," however the SDG4 (Quality Education) performance indicator is listed as "Significantly challenged with a modest increase." Increasing enrollment, attendance, student retention, and academic performance in primary schools are all important goals of the Ghana School Feeding Programme

(GSFP) [16]. SFPs are therefore thought to change households' decisions about whether or not to send their children to school [3]. In certain regions, the increased levels of enrollment, attendance, retention, and superior academic accomplishments are evidence of this behavioural shift by parents and their children [17]. Impact of GSFP on schoolchildren's cognitive development, improvement in test scores for school lunch recipients, and class participation. The caliber of the food served to or consumed by students boosted their academic results [18].

As a fundamental human right and the cornerstone of both fostering peace and advancing sustainable development, education is UNESCO's top priority. The Education Sector of the United Nations Specialized Agency for Education (UNESCO), which has a particular focus on gender equality and Africa, provides global and regional leadership in education, strengthens national education systems, and responds to contemporary global challenges through education [19]. In order to accomplish all of these goals, UNESCO, the UN's specialized body for education, has its own Goal 4, which strives to "provide inclusive and equitable quality education and promote lifelong learning opportunities for everyone." It seeks to provide equal access to education from the standpoint of lifelong learning and holistic development. It strives to guarantee that all children, youth, and adults get a universal pre-primary and secondary education that produces effective and meaningful learning outcomes as a basis for lifelong and comprehensive learning. Additionally, SDG4 strives to provide equal access to opportunities for lifelong learning for both kids and adults. Once more, it considers a renewed and broader focus on inclusion, equity, and gender equality, particularly to eliminate gender disparities and ensure more equitable access for vulnerable populations, including persons with disabilities and indigenous peoples, to all levels of education and vocational training. The SDG 4 also emphasises the need of effective learning and the development of pertinent information, skills, and competences. The targets and global indicators for early childhood education (Target 4.2), primary and secondary education (Target 4.1), as well as for youth and adult literacy (Target 4.6), as well as on the relevance of learning in terms of vocational and technical skills for decent work (Target 4.4), as well as for "global citizenship" in a diverse, interdependent, and interconnected world, make this clear (Target 4.7) [20].

Poor academic performance has been linked to a number of factors, including insufficient academic and professional teacher preparation, ineffective instruction supervision, low teacher motivation that results in low job satisfaction, inadequate teaching and learning materials, large class sizes, inadequate homework, the location of the school, and the learner and teacher [21] [22] [23] [24] [25] [26]. The low academic performance of students in Ghana may have been caused by the existence of all or some of the above-mentioned reasons. However, students' hunger is a sign that these elements are there as well as a crucial component that need to be mentioned. The researcher has seen that during break times, an average number of pupils beg for food from their teachers, their friends, and the food vendors at their numerous school canteens. Additionally, students frequently miss class due to lack or very insufficient food or money in the home or for maintenance at school. Due to empty tummies and/or insufficient food consumption at home or at school, the majority of students also complain about hunger during class time. Studies undertaken by [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] attest to the problem of student hunger and its effect on their academic performance. Therefore, the purpose of this study is to evaluate how hunger affects students' academic performance in Ghana. Examining the frequency of hunger among pupils, hurdles to appropriate food availability or supply that hungry pupils perceive, strategies for coping with hunger, and how hungry pupils perceive the effects of hunger on their academic performance are the particular objectives of the study.

2.0 Methods

A thorough assessment of the literature (content analysis) was done electronically using the Google search engine. To review material from published papers, Google scholar was used. The study took into account how school feeding programmes affect both students' academic performance and health. The review includes both qualitative and quantitative research. Students' hunger in the world, Africa and Ghana, school feeding programmes, students' hunger, effects of hunger on academic performance, effects of hunger on the realisation of the FCUBE and the SDGs, and the relationship between hunger and academic performance were among the key words used to search for the pertinent articles. Pertinent pieces in the UN SDGs, the UNICEF report on Ghana, the World Food Programme (WFP), and the Food and Agriculture Organization (FAO) were also looked at. Af-

ter that, a review was conducted to analyse and summarise the prevalence of hunger among pupils, the obstacles that teachers and hungry pupils perceive as impeding the availability or supply of adequate food, how hungry pupils manage their hunger, and how teachers and hungry pupils perceive the effects of hunger on their (pupils) academic performance. Also, ten teachers and pupils were interviewed based on the research questions. The sample size for the interview was stemmed from the recommendation of [37] that, point of saturation is normally attained at the fourth to eight interview. Both primary and secondary data were, therefore, used. The research was undertaken in the Ayensuano District in the Eastern Region of Ghana using mixed-method.

3.0 Discussion

3.1 Conceptual framework

This study offers a conceptual framework for understanding how hunger affects Ghana's FCUBE and the UN's SDG 4 goals. This framework is made up of activities that involve a thorough evaluation of the literature that demonstrates how the many core components are connected to one another based on an analysis of empirical research on the subject being studied.

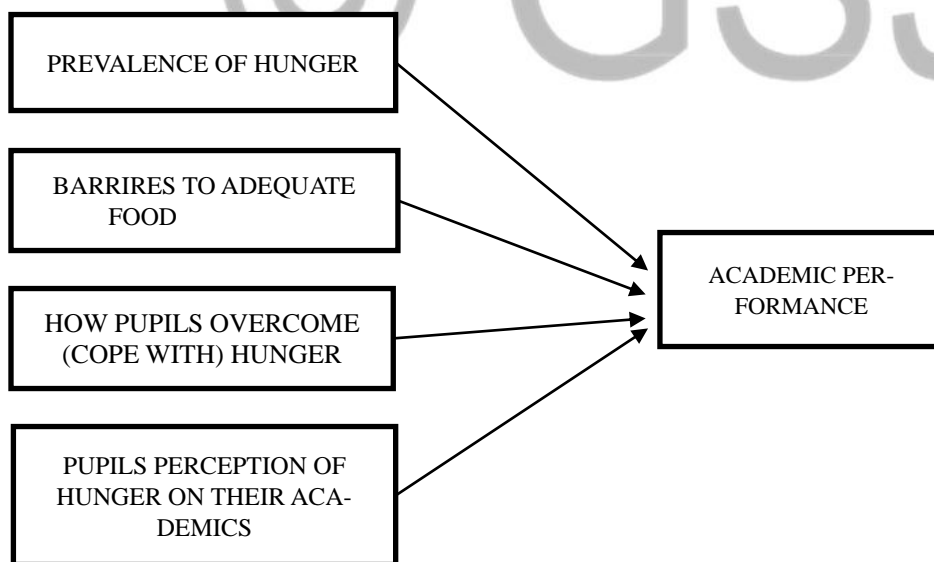


Figure 1: Conceptual Framework for the Study
Source: Researcher's Construct

According to the conceptual framework of the study, which is shown in Figure 1, achieving higher or better academic performance effectively involves a number of interconnected characteristics. For example, this is affected by variables including the prevalence of hunger among students, obstacles to appropriate food supply or stu-

dents' access to it, how hungry students manage or overcome hunger, and how hungry students perceive hunger's effects on their academic performance. In conclusion, it can be argued that the aforementioned aspects of hunger have an influence on the complete achievement of Ghana's FCUBE strategy and the UN's SDG 4.

3.2 Theoretical framework

Abraham Maslow's Hierarchical Needs Theory serves as the theoretical foundation for this investigation. According to [38], before addressing higher level development requirements, people must first address lower level deficiency needs. [39] posit that because people are needy beings with a variety of needs, even when part of their wants are satisfied, their desires continue to develop. These demands can be grouped in a hierarchy of needs, going from the most basic to the most complex. Those on a higher level (like education) will seem to claim satisfaction as soon as needs on a lower level (like food) are met. Basic necessities for supporting human existence, such as food, housing, clothes, rest, air, and water, are known as physiological requirements. The biological requirements of humans are at the base of the hierarchy of wants because they are more important than all other needs. We can't put off meeting these demands for very long. This implies that a student's first requirement is food, which is crucial. When his or her physiological requirements are met, the learner experiences the other needs (learning or education). Therefore, providing for a student's fundamental requirements, such as food, is essential for keeping them motivated. Other demands do not motivate the learner until these fundamental physiological needs are satisfied to the necessary degree. Therefore, [40] opines that it is important for parents, teachers, counsellors, and others to be sensitive to Maslow's ideas about basic needs and how their absence may impair students' academic performance in the classroom and teachers' capacity to impart knowledge. [41], who supports the aforementioned, claims that reaching goals gives people motivation. Humans are able to satisfy their unique wants and requirements through achieving their goals. Less urgent wants must be addressed before more significant needs may be met according to the psychological hierarchy of needs [37]. A person will focus their actions on meeting their lower-priority requirements before moving on to their higher-priority demands. When someone is hungry, they will put their hunger above all other desires or needs. As a result, if a student is hungry, he or she may behave differently or breach the rules since eating to quell hunger takes precedence.

dence over knowledge. All learners must have their fundamental needs addressed for learning to occur, according to [42]. Students will require the next stages of Maslow's hierarchy, which are directly tied to learning through motivation, after their physiological requirements have been satisfied. Learners must be motivated to learn if they are to succeed in the classroom. For instance, a person who is in need of food is just unable to think on anything else. Accordingly, [43] asserts that the body of the individual (learner) cannot operate properly if the physiological demands are not met. Maslow saw physiological requirements as being the most important since, until these needs are fulfilled, all other wants are put on hold. For instance, in order to exist day to day, we all require access to air, food, and water. Sadly, food is in short supply in certain parts of the world. The child's capacity to learn and digest information is undoubtedly impacted by this.

The learner may have limited access to undernourished meals in various regions of the world. Therefore, a student would not be able to study effectively if they came to class on an empty stomach. All these are the wants that people would look for and meet before any other needs related to their progress. The student is unable to go to the following levels, where education is, if the hierarchy's lowest level is not reached. Physiological requirements are the learner's natural survival instinct. When a learner's physiological requirements, notably those for food to prevent hunger, are met, only then will they consider their wants for other things, like education. Every student has the capacity to reach the educational level of self-actualization, but unhappily, progress is sometimes hampered by a failure to provide for basic requirements like food.

3.3 Content Analysis and Interviews based on the Research Questions.

3.3.1 Prevalence of hunger rate among pupils

In 11 focused group conversations, 91 participants were asked about their views on food insecurity in South Africa by [44]. They showed that although individuals were aware of healthier diets, they had little access to them, which forced them to stick to bland food. They also indicated that orphans and kids, notably school-children, who are most at risk for hunger and food insecurity, frequently experience this. Additionally, [33] investigated the connection between South Africa's food security, hunger, and academic advancement. They used an online survey to get the opinions of 1612 first-year students. 73% of students reported not having enough to

eat, while 77% reported barely feeling hungry. Additionally, 23% of the pupils reported being hungry and experiencing food insecurity.

Once more, [34] concentrated on household hunger, poverty, and childcare, and their effects on pre-school students in five states in Nigeria. Data from 1642 homes were gathered by questionnaire, and the results revealed that the situation with regard to hunger, poverty, and malnutrition among school-age children was critical. [36] explored the link between hunger and absenteeism among Liberian schoolchildren in 2022. Their study, which involved giving questionnaires to 1613 participants, found that 65% of students felt hunger. In their 2019 study, [32] examined the barriers to the SDG in Ghana as well as the equal access and inclusivity in basic education. By way of focus group discussions and interviews, data from 456 respondents were collected. Their research found that students, particularly those in rural regions, sometimes go to school on an empty stomach since there is no mechanism in place to provide them with food. In the Hohoe Municipality of Ghana, More, [29] examined malnutrition and related variables in both public and private schools. Data from 633 students were gathered through questionnaires and interviews, and it was discovered that rural students are affected by hunger and malnutrition. They also found that students at public schools are less healthy and fed poorly, which contributes to their underweight and thinness compared to those in private schools. Responses gathered from the interview reveal the following,

a. by teachers:

A moderately high percentage (40 – 45%) of our pupils come to school hungry. There are even “chronic hungry pupils” who may form a low percentage (15 – 25%) of the hungry pupils. These are pupils who complain always that they are sick especially from stomach-ache. They are frail and not much active during most of school activities.

b. by hungry pupils:

We most of the time have little amount of food to eat when we are coming to school. Our parents/guardians do not give us pocket money to school too. Sometimes too we don't eat before we come to school. Our parents will tell us to come back home during break time to eat but, we go home to find out

that there is no food. They will leave to farm without preparing nothing for us. We therefore, wait till lunch when the school feeding will come before we eat. Though, the school feeding may give us something to eat however, this is not always. And the foods serve do not satisfy us. The foods are not always delicious too.

3.3.2. What teachers and hungry pupils perceive as barriers to adequate food availability or supply

[44] [45] revealed that there has been a 12% increase in food costs during 2007 and a comparable 7.6% decline in earnings. Additionally, since 2014, food costs have climbed by 54%. They revealed that 71% of parents concur that it might be challenging to make ends meet during the summer vacation. Therefore, 62% of parents said that they occasionally lack the funds to buy meals over the summer. Once more, 94% of parents said that spending more on food during the summer influences later food expenditures, particularly during the school year. In 2019, [46] used secondary quantitative data from meteorological stations to study hunger, nutrition, and precipitation in Ghana and Bangladesh. They demonstrated that there is a connection between family hunger and rainfall, and that in Ghana, increased rainfall is associated with poor nutrition. Food spoils as a result, resulting in a shortage for homes and students.

According to [13], who conducted the Organization of Trade Unions of West Africa survey, 85–95 percent of West Africans who are employed labour informally get pitiful wages that are insufficient to cover basic requirements like food and survival. He also demonstrated that the rise in the number of people experiencing food insecurity is largely attributable to poverty, poor access to land and credit, low and inappropriate use of technology, inadequate infrastructure, unfavourable input and produce markets, poor health and educational status, and low infrastructure standards. All of these factors play a role in the poor social and economic production and productivity. The problem is made worse by market dynamics that, as a result of the unfair/unfairly biased terms of trade between rural produce and urban products, systemically assure wealth transfer from the rural population. The findings of the interview reveal the following,

a. **by teachers:**

Parents who are mainly farmers suffer post-harvest losses. Farm inputs they use are also less-cost effective. They again practice the subsistence farming which leads to low output (Casablanca).

Most of their parents who are unemployed and are adolescent parents lack the support system from their families to provide for enough and nutritious foods for themselves and their children (Patagonia).

Their families live on very low finance at home. When they cook in the evening and unfortunately there is little or nothing left for the next morning consumption, they come to school very inadequately fed or on empty stomach (Azerbaijan).

The caterers who prepare the school feeding do not cook enough and balance foods for the pupils (Timbuktu).

There is increased demand of food from pupils' homes due to high growth rate resulting from increasing teenage pregnancy and child birth (Pompeii).

The issue of climate change is affecting the yield of their parents coupled with global market factors (economic crunch) (Songhai).

Some of our hungry pupils are orphans, or either suffering from the consequences of single parenting or broken homes (Calcutta).

Some caretakers use hunger as a way of discipline or punishment to the children who are our pupils (Cotopaxi).

Failure on the part of government to provide adequate supplies to caterers. The governments have been breaking their promises to alleviate poverty and hunger from the parents and children (pupils) (Samoa).

b. **by hungry pupils:**

Our parents always they don't have money to give us for school. Sometimes they tell us that their farm produce do not yield well, and the little they got they share with the land owners. Also, we are many in our homes. We have plenty siblings and other family members staying with us. When they cook, we get little to eat. When our parents get some money they share it to cover so much expenses. They are not

able to give us good breakfast which is also enough, including pocket money for school. Again, because of the school feeding programme, our parents do not give us any/ enough food and money. They tell us the food from the government will be given to us at school.

3.3.3 How pupils overcome (cope with) hunger

According to [44] qualitative study on household food access and security in South Africa, households and students use complex food systems, including family food production, food collection from public areas, charitable donations, and occasionally theft, to cope with or overcome hunger. Additionally, [47] examined how NGOs helped the Fanteakwa District of Ghana achieve food security and reduce poverty. In addition to reviewing pertinent data, they used a questionnaire and interviewing techniques to collect information from sixty respondents. Their research showed that families use the Hunger Project to cover their children's food-related school expenses. In order to combat the hunger that students suffer in the many areas where the Hunger Project operates, this has helped them boost their food security.

Again, [28] looked at how well the global United Nations flagship reports handled the connections between education and other SDGs. Data from 720 respondents were collected via primary content analysis, easy sampling, and sampling with a purpose. They showed that households, communities, and students employ social protection programmes like cash transfers, free tuition and books, and school food programmes as tactics to combat hunger. They also disclosed that this resulted in lower child labour rates internationally, greater school enrolment rates, and fewer school dropouts.

More, [48] examined the numerous initiatives taken by the Hunger Project to combat poverty and hunger in Ghana's rural Asante-Akyem District. By using a qualitative method to data collecting, interviews were conducted with a purposively chosen group of 12 respondents. According to their research, community trainings on self-sufficiency, women's empowerment in food production, nutrition, family planning, primary health care, and education are among the strategies used by households to avoid or manage hunger. This has repercussions for how students manage, get beyond, or deal with hunger at school. In addition to the aforementioned, investing, partnering, and being globally responsible are ways to end the hunger that students' homes endure. In conclu-

sion, families and schoolchildren may manage and conquer hunger through adult literacy, microfinance, and skills development programmes. To evaluate secondary data from 35 Sub-African nations, [49] used stratified sampling. Their research showed that raising household standards of life through socioeconomic progress might reduce hunger. As a means of controlling or coping with hunger, this improvement must also be long-lasting and a shared equity and equality among the people. This will make it easier for them to get access to sufficient quantities of good food, particularly schoolchildren. Responses from the interview reveal the following,

a. **by teachers:**

The hungry pupils we see around most of the time depend on their colleagues, other family members as well as well-meaning benevolence for their foods (Casablanca).

Some steal from their friends and even we teachers to get food to eat (Patagonia).

On lucky days there are the school feeding programme for them to rely on. Some of we the teachers buy food from the school canteen for them (Azerbaijan).

These pupils “parasite” and beg for food from their friends. They also bully weak pupils for their foods (Timbuktu).

Teachers and food sellers at the canteen sometimes provide food for these less privileged pupils (Pompeii).

Some hungry adolescent female pupils engage in early sex to cater for themselves (Songhai).

Some of their extended family members at times support them with food and other needs (Calcutta).

They give themselves to all manners of child abuse especially child sex and child labour to get food to eat (Samoa).

b. **by hungry pupils:**

Some of our teachers give us food when we come to school. The school feeding programme is also another way we get some food to eat. Again, some of our friends who know our plight call us to share their breakfasts and lunches with them. We at times do menial jobs (weeding, gathering leafy vegetables to sell, and making brooms and baskets, head portorage) for people to get some foods and money for our

upkeep in school and even at home. More, some good neighbours may at times feed us or give us some money for school. Moreover, we most of the time feed on fruit trees on our school compounds or within the communities our schools are found within.

3.3.4 Teachers and pupils perception about hunger on their(pupils) academic performance

[28] asserts that undernutrition brought on by hunger has a negative effect on students' academic performance. They discovered that when social protection programmes that address learner hunger, such as cash transfers, free tuition and supplies, and school feeding initiatives, lead to higher school enrolment, fewer school dropouts, and less child labour, then their absence has the opposite effect. This further contributes to students' subpar academic achievement throughout their school experiences. Again, [50] examined how the National School Feeding Program (GSFP) affected student enrolment, attendance, and retention at Nyoglo in the Ghanaian Savelugu-Nanton Municipality. The school food programme increases student attendance, according to a review of pertinent journals and interviews with 155 respondents. They also found a statistically significant link between SFP and retention and school dropout. That is, the availability, sustainability, sufficiency, and quality of food for students encourages their attendance in class, reduces absences, and aids in their completion of schooling up to their final grades (limits school dropout rate). The inverse of what was been stated is true.

Further, [30] study on the effects of student food poverty in Nova Scotia on their academic performance. He obtained information from 1030 respondents via questionnaires and written interviews, and the results showed that students who experience food insecurity do much worse academically. In order to better understand the equity in education sustainable development goal, [51] conducted a descriptive study in OECD countries. The results showed that student location and socioeconomic background have a significant impact on educational performance. As a result, rural residents with severe food insecurity and hunger, along with a weak socioeconomic background, perform badly in school [29] [32] [13]. Additionally, literacy achievement has a high correlation with socioeconomic background. The research by [32] on inclusivity and fair access in basic education also revealed that students find it difficult to attend class without food. Truancy, a low percentage of retention, and subpar academic achievement result from this.

Furthermore, [52] examined the effects of inadequate nutrition (restricted access, adequacy, length, and quality) on students' academic performance in Zimbabwe. He used a phenomenological approach and interviewed 19 participants on purpose. He acknowledged that hunger plays a role in school dropout. Additionally, students from low socioeconomic backgrounds who are hungry at school lie, cheat, and steal for their friends. Because of their isolation and low self-esteem, these students perform poorly in school.

Additionally, Fairview Elementary School (USA), a low-performing academic institution, indicated in [53] study based on Maslow's hierarchy that, students feel at peace at school when their eating needs are met. This increases their memory rate, reduces truancy, and encourages children to actively participate in learning activities. This is due to the fact that students can get healthy food at school and consume it without feeling intimidated, which increases attendance. Therefore, the absence of the required provisions of learners feeding needs leads to low academic performances on their part.

More to the above, in order to alleviate short-term hunger and undernutrition among primary school students in rural parts of North and North-Eastern Uganda, [54] looked into community-based nutrition-sensitive approaches. They had eight focus groups with ten participants each. Their research found that offering meals to students at school improves their academic performance. This aids in combating temporary hunger and malnutrition. Positive educational results for students are a result of this. The findings of the interview reveal the following,

a. by teachers:

We most of the time witness psycho-social issues from these pupils. They don't play with their friends or involve themselves in both curricula and extra-curricular activities. Most of these pupils perform poorly in academics and school life (Casablanca).

The pupils loss their attention during instructional times which leads to below average academic performance (Patagonia).

They have very little or no interest in lessons. They don't concentrate but prefer to sleep in class. They don't do well in studies (Azerbaijan).

The children (hungry pupils) play truant which makes them perform minimally in school (Timbuktu).

They behave absent-mindedly during lessons which shows how disinterested they are towards studies.

This negatively affects their performance (Pompeii).

Most of these pupils, especially the adolescent female dropout of school. They suffer from teenage pregnancy which truncates their academic and school life (Songhai).

They always think about what to eat at school and home rather than what is going on in the school or classroom. This challenge has been a critical barrier to their academic excellence (Calcutta).

The impact of hunger on academics is abysmal performance from the pupils. It has increased disrespectfulness in these pupils. Once they are making all effort to support their selves on their own, this means they don't give respect to their parents, guardians and most adults (Samoa).

b. By hungry pupils:

Most of the times we don't come to school. We also feign sickness at home and in school to miss classes. We cannot pay attention to lessons when we are hungry. We become tired, weak and unhappy from the stomach pains. Some friends who always see us hungry laugh at us or tag us as poor children. We feel sad and shy to be with them in class, school or during play time. Therefore, we cannot learn well. It is difficult for us to get food to eat as to talk about stationeries. Most of us do not have stationeries. Our parents do not buy them for us. During class and home exercises or assessments we don't get the opportunity to take part. Friends laugh at us when we can't read or write well, speak well, solve mathematics and even dress neatly. Sometimes we feel like stopping schooling.

3.3.5 Content Analysis Table

SN	STUDY	FINDINGS
	THEORETICAL (Maslow's Physiological Needs Theory)	
	Maslow (1943), Trivedi (2019), Cordova (2018), Kurt (2021), Lutz (n.d), McLeod (2007)	Learners require physiological needs like food in order to sense the urge for learning. Food is both a need and a learning incentive for students.
	EMPIRICAL REVIEW	
1	<i>Prevalence of hunger rate among pupils</i>	
	Chakona & Shackletonm (2017)	Hunger and food insecurity are major issues for orphans and school children.
	Wagner, Kaneli & Masango (2021)	Students who lack access to food suffer from hunger.
	Manyong, Abdoulaye, Ojide, Ogundapo, Ayoola, Dasheil & Okike (2021)	Children of school age experience exceptionally high rates of hunger, poverty, and malnutrition.
	Appiah, Salihu, Oppong, Acheampong, Fenteng, Darteh, Takyi, Ayerakwas, Boakye, & Ameyaw (2022)	The proportion of students who experience hunger is greater, larger or higher.
	Arkoful, Basiru, Anokye, Latif, Agyei, Hammond, Pokuaah, Arkoful, and Abdul-Rahaman, (2019)	Due to the lack of access to food assistance services, students, particularly those in rural regions, frequently arrive to school hungry.
	Abbozo, Atito, and Abubakari (2016)	Rural students are affected by hunger and malnutrition.
2	<i>What teachers and hungry pupils perceive as barriers to adequate food availability or supply.</i>	
	Defeyter (2016)	Price increases for food. More money is spent on food during holidays, which influences school year food purchases.
	Goetz (2008)	Inadequate finances, particularly during the summer holidays, to purchase enough food.
	Cooper, Brown, Azzarri & Meinzen-Dick (2019)	Higher rainfall causes food rotting, which results in poor nutrition.
	Offei-Nkansah (2020)	Low family income wages, poverty, difficult access to credit and land, lack of technical sophistication, shoddy infrastructure, unfavourable input and produce markets, poor health, and low educational attainment are all contributing factors.
3	<i>How pupils overcome (cope with) hunger</i>	
	Chakona & Shackleton (2017)	Food production by families, charitable gifts, and even thievery are some strategies for overcoming hunger.
	Okae-Adjei & Addai (2015)	The Hunger Project (NGO) covers students' food expenses in addition to their tuition.
	Vladimirova & Le Blanc (2015)	To combat learner hunger, households take use of monetary transfers, free tuition and resources, and school nutrition.
	Yeboah-Asiamah, Musah-Akurugu, Bawole & Nurudeen (2015)	Households can overcome hunger through programmes involving adult literacy, microfinance, and skill development.

	Ekholuenetale, Tudeme, Onikan & Ekholuenetale (2020)	Reducing hunger might be accomplished by steadily raising family standards of living.
4	<i>Teachers and pupils perception about hunger on their (pupils) academic performance</i>	
	Vladimirova & Le Blanc (2015)	Poor academic performance results from a lack of interventions for learner poverty and hunger.
	Yendaw & Dayour (2014)	A statistically significant correlation exists between the school feeding programme and both retention and dropout rates.
	Frank (2018)	For students that are food insecure, poor academic performance is substantially more prevalent.
	Education at a Glance (2018): OECD Indicators	Location and socioeconomic status of students have a significant impact on their educational success. Rural residents that are hungry struggle intellectually.
	Arkoful, Basiru, Anokye, Latif, Agyei, Hammond, Pokuaah, Arkoful, & Abdul-Rahaman (2019)	A lack of food makes students unwilling to attend class. Truancy, a low percentage of retention, and subpar academic achievement result from this.
	Chinyoka (2014)	Hunger has a role in school dropout. Students who are starving take money and food from their friends. Isolation, low self-esteem, and subpar academic achievement result from this.
	Fisher & Crawford (2020)	When there is enough food for them to consume, learners feel at ease to study. This reduces absenteeism and intimidation, which improves academic achievement.
	Elolu & Ongeng (2020)	The provision of meals at school aids students' academic performance since it combats temporary hunger and malnutrition.

3.4 Implication and Conclusion of the Study

Education is understood as a deliberate endeavor to fully develop the student. This indicates a conscious effort to support the learner's growth and development while acknowledging the importance of overall personality development. As a result, the learner's cognitive or intellectual, social, moral, spiritual, economic, cultural, and physical aspects are equally important. The United Nations Sustainable Development Goal 2 (Eradication of Hunger/Zero Hunger) might be connected to this on the physical level. Additionally, it might be considered as having an impact on achieving SDG 4. (Inclusive, Quality and Equitable Education for all). The 17 UN SDGs can be achieved through mass education, however this goal is still far off due to the widespread evidence of hunger among students across the world. The aforementioned immediately impacts Ghana's Free Compulsory Universal Basic Education (FCUBE) policy. This means that both the UN's and Ghana's ambitions for education

may fall out of reach as a result of hunger. Therefore, owing to learner hunger, not everyone will benefit from education as a social weapon for empowering and emancipating humans from chronic and modern social issues, difficulties, and problems. It is recommended that educational policy makers, managers and administrators must incentivize pupils through provision of basic necessities such as food. Again, educational leaders should provide the resources to execute the free school feeding programme to encourage pupils' enrolment, retention and increase in their academic performances. It is also recommended that the Livelihood Empowerment Against Poverty (LEAP) from the government should be broadened, administered efficiently and effectively to capture majority of financially weak homes. This will help poor homes to cater for the physiological needs (food) of their children for the realization of the other higher needs (education).

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