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Effect of Food Provision on Pupils' Participation in Learning: A Case Study in Babati Rural District, Tanzania

Baraka Manjale Ngussa, PhD[1]*, Gregory J. Mbifile[2]
[1]Director of Graduate Studies and Arusha City Extension Centre, University of Arusha, Tanzania
[2]Headmaster, Duru Secondary School, Babati, Tanzania

***Corresponding Author:**
Baraka Manjale Ngussa
Email: ngussathe5th@gmail.com

Abstract: This study investigated on the influence of food provision on pupils' participation in learning across 130 Primary Schools in Babati Rural District. A total of 120 pupils and 101 teachers were randomly selected to participate in the study through the questionnaire. Data was analyzed through descriptive statistics, t-test and Pearson Product Moment Correlational Coefficient. Reliability of questionnaire items ranged between .887 and 0.962 Cronbach's Alpha meaning the instrument was reliable for data collection. The study established that provision of food is limited to some schools where the distribution of food is fairly done; the amount of food is sufficient and is prepared in clean environment. However, the food provided does not cater for balance diet and there is no variety of food given. Pupils in schools that offer food services have significantly higher mean score in learning participation than pupils in schools where food service is not offered. Thus, the rate of learning participation is significantly influenced by food provision. The more effective food provision, the more pupils' participation in learning takes place. The study recommends that effective provision of food should be extended to all schools across the District. School administration should ensure provision of balanced diet so that learners can enjoy the food and have better health. Government authority and other interested groups should also strive to sustain effective food provision in order to raise the level of pupils' participation in learning.
Keywords: Food Provision, pupils, participation, learning, Babati, Tanzania

BACKGROUND TO THE PROBLEM

Food is one of basic needs that should be met by every human being for effective functioning of the body and proper fulfillment of day to day activities. This is not exceptional to learners. As pupils need to concentrate in reading, writing and doing other academic activities, they need to be provided with not only sufficient but also balanced died. With this regard, pupils need different types of food uptake, for the different functions within the body like building the body for growth, mental health, body security, and body energy. Due to this, schools should provide food to learners to make them active in the learning activities. Thus, the Provision of food in school is a fundamental structural idea that can be integrated into achieving significant improvements in students' academic performance. This is supported by Hooton [1] who argued that without proper and reasonable amount of diet, children's concentration declines and their mind is inhibited to concentrate in learning. With this regard, pupils in primary schools, particularly, should be provided with food that satisfies their body needs and makes them active as they are in school environments especially in the classroom.

Maslow [2] in his hierarchy of needs contended that one must meet the basic physiological needs such as food, water and warmth, after that the focus would be on the need to be safe, then the need to belong to social groups, and so on up the hierarchy. This means that, all humans act in a way which will address basic needs, before moving on to satisfy other, so-called higher level needs. This shows how basic needs must be met before one can climb the hierarchy, to address more complex needs. From this theory, it is important to note that if food is effectively provided to pupils in primary schools the rate of learning will be enhanced. Gillard [3] comments that child nutrition is very important and the school should provide breakfast, lunch and dinner in proper ways in order to help learners to think healthily, grow healthily and be physically fit. Chrissy [4] added that breakfast consumption enhances academic performance by improving cognitive functions such as memory and neural efficiency and reduces absenteeism and tiredness. This suggests that children who are properly provided with food in terms of morning breakfast will be more active in school activities participation. According to Florence, Asbridge and Veugelers [5], nutrients in fruits and vegetables, particularly, help to protect the body from infection and reduces the risk of nutrient deficiencies, which could lead to fewer missed days of school and more time spent in learning. They also add that fruits and vegetables provide fiber to

prevent constipation, which may destruct children from learning because of discomfort and crankiness.

Several studies have been conducted in different countries to find out the effect of food provision on learners' participation in learning. Gamerman [6] indicates that Finland was among the first countries in the world to serve free school meals. According to Hoppu *et al.*[7], school food in Finland consisted of soups, porridges and thin porridge-type dishes. Children brought bread and milk with them to supplement their school lunch, which was generally not very substantial. Reasons for Finland to provide food to students were to help young people to maintain their energy used at school and help them to learn effectively. In the context of Africa, Nigeria was one of the first countries to introduce food in its school. According to Dike [8, p-45] "the State of Nigeria pioneered a state-wide school meals programmed for all elementary school pupils in public schools. Other countries in Africa are Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central Africa, South Africa and Kenya".

In Tanzania food provision in primary schools is a problem, since some schools provide food while some schools do no. It is this background that propelled the researchers to investigate on the influence of food provision on pupils' participation in learning in order to give necessary recommendations. Although studies have been done concerning food provision on school children, no specific study was done in Tanzania on food provision and pupils participation in learning. In most Tanzanian Primary Schools, pupils lack food when they are at school. This weakens their physical and mental health that results to the poor concentration and effective participation in learning which may finally lead to poor academic performance. Researchers in the present study therefore, sought to investigate the influence of food provision on pupils' participation in learning among Primary Schools in Babati Rural District in order to come up with answers to the following research questions which guided this study:

1. What is perception of respondents on effectiveness of food provision among Primary Schools in Babati Rural District?
2. Is there significant difference between teachers and pupils in perception of effectiveness of food provision in Primary Schools?
3. What is the perception of respondents on pupils' participation in learning?
4. Is there significant difference in pupils' participation in learning between schools that offer and those which do not offer food services in Babati Rural District?
5. Is there significant relationship between effectiveness of food provision and pupils' active participation in learning?

THEORETICAL FRAMEWORK

The study was be guided by **t**he Maslow's motivation theory [2, p.17] which **s**tates that, ''we must satisfy each need in turn, starting with the first, which deals with the most obvious needs for survival itself." The needs that are usually taken as the starting point for motivation theory are the so-called physiological drives. That is, all humans act in a way which will address basic needs before moving on to satisfy others so-called higher level needs. Maslow represented this theory as a hierarchical triangle. This shows how important it is for basic needs to be met before one can climb the hierarchy, to address more complex needs. Maslow [9] added that basic human being needs include such physiological needs as needs for food, clean water, clothing and shelter. Maslow recommended that human needs arrange themselves in hierarchies of prepotency (i.e. predominance) and that the appearance of one need usually rests on the prior satisfaction of another more proponents need. This means that for the pupil to perform in academics, they need to be satisfied with food in their bodies.

REVIEW OF RELATED LITERATURE AND STUDIES

A range of literature and studies have been consulted to throw light on issues related to food provision and learning participation, food provision and academic performance and quality and quantity of food.

Food Provision and Learners' Participation

Availability of food in schools is essential for learners to actively participate in teaching-learning process. According to Rogers [10], healthy individuals are open to experiences and academic achievements. This implies that the pupils with good healthy are comfortable in their activities and this may lead them to be free in learning experience. Consumption of a healthful food on a daily basis consisting of a variety of foods, especially high-fiber and nutrient-rich whole grains, fruits, and dairy products makes a pupil fit for learning process. Failure to this, the process of learning became difficulty.

According to Rosso and Marek [11], lack of food provision in schools leads to repetition and dropout rates. When children are provided with no or poor nutrition, their weakened condition reduces their learning capacity and forces them to end their school journey prematurely or stay out of schools. Therefore, effective learning participation is hindered. According to Rausch [12], protein found in meat, fish, milk and cheese, among others, are used to create neurotransmitters as chemical messengers to the brain. Lack of this substance, known as protein energy malnutrition, leads to poor student participation. Kubik [13] argued that food is a major facet of education. Provision of food benefits students emotionally and enhances their good performance on academics.

Effective food provision in schools, therefore, leads not only to healthier children, but to improved attainment in their studies. He also added that hunger affects concentration, but well-nourished children fare better at schools. Finally, he suggested that wherever possible, free school meals should be extended to all primary school children, starting with the most deprived areas. According to Grantham and McGregor [14], if breakfast and lunch is provided, children are likely to get to school earlier. When pupils notice that there is morning breakfast they are likely to come as early as possible in order to get it as brain function is sensitive to short-term variations in the availability of nutrient supplies. Basch [15] argued that participation in school breakfast programs has been associated with reduced absenteeism. Furthermore, breakfast has positive effect to learning in children in terms of behavior, cognitive, and school performance. School breakfast programs, further, improve attendance rates and decrease tardiness. Among severely undernourished populations, school breakfast programs seem to improve academic participation and cognitive functioning [16].

Haroun, Harper, Wood and Nelson [17] commended that lunchtime food provision and consumption in primary schools can improve healthy growth and academic achievement, encouraging pupils' school attendance. Kleim [18] is of the same view that school feeding program serves as incentive for enrolling children in school and encouraging daily attendance. This is because as the schools provide food, pupils will not think on stomach disturbance and therefore effective attendance will be the result. Feingold [19] added that there is evidence that school feeding programs can increase attendance rates especially for girls.

Food Provision and Academic Performance

According to Alaimo, Olson and Frongillo [20], food-insufficient children have significantly lower arithmetic scores and are more likely to have repeated a grade, and difficulty getting along with other children. This demonstrates that negative academic and psychosocial outcomes are associated with food insufficiency. According to Sjöberg, Hallberg, Höglund and Hulthén [21], meal pattern with omission of breakfast and lunch is related to inability of learners to participate fully in learning and consequently poor performance. Florence, Asbridge and Asbridge, Paul and Veugelers, [5] noted that learners with insufficient overall diet quality are significantly more likely to do poorly in the teaching and learning process. Because of imbalanced diet these pupils may suffer with poor healthy in physical and mental process. Furthermore, pupils with decreased overall diet quality are significantly more likely to perform poorly in classroom activities and consequently end up with poor general performance. Hoyland, Dye and Lawton [22] concluded that school breakfast programmed has positive effects on academic performance. Therefore, provision of food in schools propels learners to achieve higher in their studies.

Quality and Quantity of Food

According to Ghosh [23], malnutrition is a major problem in both developed and developing countries and deficiencies in some nutrients have been reported to cause diseases which could lead to impaired cognitive development. Cook and Frank [24] contend that optimal physiological, cognitive, and emotional development and function in children and adults require access to food of adequate quantity and quality at all stages of the life span. Therefore, quantity and quality of food must be ensured in Primary Schools. If learners are not provided with ideal amount of food, they will feel hunger and their rate of learning will be reduced.

According to Grantham and McGregor [25], there is an association between hunger, poor dietary intakes, stunting, underweight, and poor school performance. Pupils who are facing a problem of hunger in school are unable to think in a proper way and therefore, they cannot compete to the learning activities. Furthermore, insufficient food leads the pupils to dislike the school, subjects and as a result, poor attendance increases; this may cause management of the schools to be difficulty.

According to Brown [26] children should be given right nutrients to enhance their growth development and survival. He also argued that the frequency of the meals should be proper. According to Ann [27], human body functions best when supplemented by the right kinds of food in the correct proportion. The body should receive enough of each nutrient type because foods vary in their chemical composition [28]. Pereira and Sánchez [29] believed that, the quantity and quality of food consumed by pupils affect their growth, survival and cognitive domain. The pupils who get good and balanced diet with proportion ratio are likely to perform better in academic activities. Worsley [30] emphasized that healthy meals support schools' core mission of education, especially when it comes to boosting students' concentration, focus and cognitive function. This shows that improved nutrition in schools increases focus and attention, improved test scores and better classroom behavior. Confessore [31] maintained that to bring school meals into kids would make them more energetic and better able to focus in Class. The government should, therefore, be very strict to nutrition standards on all food supplied in schools, because the meals they get at school may be the only meals they receive that day, so when children receive proper nourishment, they are not only healthier, but they also have better school attendance and perform better academically.

According to Gustafson [32] insufficient nutrition lowers kids' IQ scores and memory capacity. Furthermore, Kleinman, Hall, Green, Korzec-Ramirez and Patton [33] argued that, iron deficiency on children developmental process causes anemia that can affect cognitive capabilities and academic performance. Poor dietary can even influence negative effect on cognitive behaviors and academic abilities. Particularly, TFNC Report [34] suggest that, proper nutrition in primary schools should be ensured and the food should contain protein to prevent kwashiorkor, carbohydrates and fats to prevent marasmus and vitamins and minerals to prevent nutritional disorders such as exophthalmia, beriberi, scurvy, anemia and goiter. Figlio and Winicki [35] contributed that inadequate nutrition impacts negatively on children's ability to learn and benefit from education. Proper nutrition can improve children ability to concentrate, avoid disruptive behavior and encourage children to attend the school. Therefore, the school meal program is an important component of policies to encourage school attendance and educational achievement by children, particularly those from the disadvantaged background.

MATERIAL AND METHODS

Research Design

The research design adopted in this study was descriptive survey, which was intended to obtain pertinent and precise information concerning the effect of food provision on pupils' participation in learning. According to Orodho [36], descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. Bell and Jankins [37] argue that survey design leads to obtaining information which can be analyzed and compared to address the problem under investigation. In this study, data was collected by the use of questionnaires. Questionnaire was used because it was economical and anonymous. According to Orodho [36], questionnaire guide makes it possible to obtain the data required to meet the specific objectives of the study. It also enables the researcher to obtain in-depth information from the respondents [Kothari, 2004].With this regard, self-administered questionnaires for teachers and pupils were employed with 4 point scaled items.

Population and Sampling

The target population of this study was 130 primary schools in 21 wards of Babati Rural District. Stratified sampling was used to determine respondents to the questionnaire. The schools were categorized into two major strata: those which offered food services and those which did not offer food services. From each stratum, random samples of seven schools was selected so that to have a total of 14 schools that participated in the study. All teachers and 20% of Standard Seven Pupils were taken to fill the questionnaire. The collected data was analyzed using descriptive statistics, t-test and Pearson Product Moment Correlational Coefficient with the help of Statistical Package for Social Science (SPSS) software.

Validity and Reliability

Validity is the extent to which the instrument measures what it is intended to measure. Validity of the questionnaire was ensured through expert judgment in that several experts went through the questionnaire in relation to research questions and recommended where adjustments were needed. Adjustments were made accordingly before the actual data collection.

Reliability, on the other hand, is the degree to which an assessment tool produces stable and consistent results. Polit and Hungler [38] refer to reliability as the degree of consistence in which an instrument measuring the attitude of respondents. Cronbach's Alpha was used to test reliability of questionnaire items under two major variables namely Food Provision and Pupils' Participation in Learning as seen in Table 1. The cutoff point was for acceptable reliability was 0.7. The Obtained Cronbach's Alpha for the two variables in question ranged between .887 to 0.962 meaning the items were reliable for data collection.

Table 1: Reliability Analysis Results

SN	VARIABLE	ITEMS	CRONBACH'S ALPHA	INTERPRETATION
1.	Food Provision	10	.962	Reliability
2.	Participation in Learning	6	.887	Reliability

Ethical Consideration

Before data was collected, the researchers sought for permission from the Babati Rural District Executive Director. Then the researcher visited the heads of selected primary schools for necessary arrangements. Before distributing questionnaires, the researcher ensured his respondents about the confidentiality of the information they provided.

ANALYSIS AND INTERPRETATION OF DATA

This part presents, analyzes and interprets findings of the study. Analysis is divided into two parts namely; analysis of demographic factors for research respondents and analysis of research questions that guided this study.

Table 1: Demographic Characteristics of Respondents

SN	CATEGORY	FREQUENCY	PERCENT
1.	**Gender of Respondents**		
	Male	108	48.9
	Female	113	51.1
	TOTAL	**221**	**100.0**
2.	**Position of Respondents**		
	Pupils	120	54.3
	Teachers	101	45.7
	TOTAL	**221**	**100.0**

As far as gender is concerned, 111 (51.2%) were females while 106 (48%) were males. This suggests that majority of research respondents were females as compared to their female counterparts. One hundred and twenty (54.3%) were pupils while teachers were 101 (45.7%). Therefore, majority of respondents were pupils as compared to their teacher counterparts.

Analysis of Research Questions

Analysis of data was done following five research questions that guided this study:

1. What is perception of respondents on effectiveness of food provision among Primary Schools in Babati Rural District?

This research question was analyzed using Descriptive Statistics in terms of Mean Scores and Standard Deviations (SD). In order to determine perceived level of effectiveness of food provision in primary schools that provide food in Babati Rural District, ten items were measured and interpreted as follows: 3.50-4.00 = Strongly Agree, 2.50-3.4 = Agree, 1.50-2.49 =Disagree, 1.00-1.49 = Strongly Disagree.

Table 2: Perceived Effectiveness of Food Provision

SN	ITEM	MEAN	SD	INTERPRETATION
1.	Pupils are always provided with food at school.	3.6279	.64066	Strongly Agree
2.	The food is provided on time.	3.5263	.66258	Strongly Agree
3.	The food is served in clean utensils.	3.5449	.61807	Strongly Agree
4.	Distribution of food is fairly done.	3.4793	.71621	Agree
5.	The amount of food provided to pupils is sufficient.	3.4353	.72890	Agree
6.	The food is prepared in clean environment.	3.0357	.81815	Agree
7.	The food provided at school is delicious.	3.0357	.81815	Agree
8.	The food provided is of good quality.	2.8935	.90660	Agree
9.	The food provided at schools caters for balanced diet.	2.2118	.93700	Disagree
10.	There is variety of food types.	1.9405	.92667	Disagree

Based on information from Table 2, respondents strongly agreed that pupils are provided with food (M=3.6279, SD=.64066), the food is provided on time (M=3.5263, SD=.66258) and that the food is served in clean utensils (M=3.5449, SD =.61807). This is something worth noting because when food services are effectively provided in schools, children pay attention to learning tasks and the food improves their ability to concentrate, something which facilitates effective learning. Grantham and McGregor [39] argue that, availability of feeding programs in schools increases the probability that children will perform better.

Additionally, respondents agreed that distribution of food is fairly done (M=3.4353, SD =.72890), the amount of food provided is sufficient (M=3.4353, SD=.72890) and the food is prepared in clean environment (M=3.0357, SD=.81815). Cook and Frank [40] argue that optimal physiological, cognitive, and emotional development and function in children and adults requires access to food of adequate quantity and quality at all stages of the life span. They also add that children should be given right nutrients to enhance their growth, development and survival in the community. Respondents further indicated that the food provided at schools is delicious (M=3.0357, SD=.81815) and is of good quality (M=2.8935, SD=.90660). The food provided fairly makes every individual pupil to get the right amount of food. The clean environment helps to prevent eruption of diseases and accident to the pupils and cooks as they come closer to the place where food is prepared. According to Olson and Holben [41], nutrition security encourages and motivates children to perform better in academic area.

Respondents, however, disagreed that the food provided at schools cater for balance diet (M= 2.2118, SD=.93700) and that there is a variety of food given

(M=1.9405). Rogers, [10] argues that healthful food consists of a variety of foods, especially high-fibre and nutrient-rich whole grains, fruits, and dairy products will make a pupil fit for learning process. Thus, balanced diet which comprises all types of food components should be provided to the pupils in primary schools in order to enhance their level of participation in learning. In view of this, TFNC Report [34] further suggests that "nutrition in primary schools should be emphasized' and the food provided should contain protein to prevent kwashiorkor, carbohydrates and fats to prevent marasmus and vitamins and minerals to prevent nutritional disorders so that pupils should be able to compete in academic activities. Furthermore, Florence [5] noted that students with insufficient overall diet quality were significantly more likely to do poorly on the assessment. Ann [27] confirms that human body functions best when supplemented by the right kinds of food in the correct proportion. Thus, primary school food services should comprise a variety of food.

2. Is there significant difference between teachers and pupils in perception of effectiveness of food provision in Primary Schools?

This question called for testing of a null hypothesis which states: *There is no significant difference between teachers and pupils in perception of effectiveness of food provision in Primary Schools.*

The hypothesis was tested by t-test which compared differences in perceptions between teachers and pupils on effectiveness of food provision in Primary Schools which provide food services.

Table 3: Group Statistics for Effectiveness of Food Provision

	What is your position?	N	Mean	Std. Deviation	Std. Error Mean
Food Provision	Teacher	96	3.0793	.43086	.04397
	Student	76	3.1471	.38273	.04390

Table 4: Independent t-test for Effective of Food Provision

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Food Provision	Equal variances assumed	.217	.642	-1.077	170	.283	-.06783	.06300	-.19219	.05654
	Equal variances not assumed			-1.092	167.711	.277	-.06783	.06214	-.19050	.05485

According to Table 2, both teachers (M=3.0793, SD=.43086) and pupils (M=3.1471, SD=.38273) agreed that provision of food services is effective. However, the mean score for pupils was slightly higher than that of teachers but t-test for equality of means indicates a Sig of .283 which is greater than the critical value (.05). Therefore, we accept the null hypothesis and maintain that there is no significant difference in perception of teachers and pupils on effectiveness of provision of food services among Primary Schools that offer food services in Babati Rural District, both groups agreeing that provision of food service is effective. This is something worth noting because when food provision is effective, learning will be enhanced.

3. What is the perception of respondents on pupils' participation in learning?

Considering the information from Table 5, respondents strongly agreed that pupils participate in teaching-learning sessions (M=3.5890, SD=.55444). In addition, they agreed that pupils participate in extracurricular activities (M=3.4648 SD= .65512), they ask questions (M=3.4318, SD=.61924) and give contributions during teaching-learning sessions (M=3.4182, SD=.68088), they participate actively in group assignments (M= 3.4220, SD=.66226) and they return individual assignment on time (M=.3.3945, SD=.67909.

Table 5: Perception of Respondents on Pupils' Participation in Learning

SN	ITEM	MEAN	SD	INTERPRETATION
1.	Pupils participate in teaching-learning sessions.	3.5890	.55444	Strongly Agree
2.	Pupils actively participate in extra-curricular activities.	3.4648	.65512	Agree
3.	Pupils ask questions during teaching-learning sessions.	3.4318	.61924	Agree
4.	Pupils give contributions during teaching-learning session.	3.4182	.68088	Agree
5.	Pupils participate actively in group assignments.	3.4220	.66226	Agree
6.	I return individual assignment on time.	3.3945	.67909	Agree

According to Franklin [42], food is a Fuel for learning': Healthy meals support schools' core mission of education, especially when it comes to boosting students' concentration, focus and cognitive function. The pupils who are satisfied with food are able to compete with their fellow pupils in the teaching and learning process.

4. Is there significant difference in pupils' participation in learning between schools that offer and those which do not offer food services in Babati Rural District?

This research question called for testing of a null hypothesis which states:

There is no significant difference in pupils' participation in learning between schools that offer and those which do not offer food services in Babati Rural District.

This hypothesis was tested by the use of t-test which compared differences in pupils' participation in learning between schools that offer and those which do not offer food services in Babati Rural District.

According to Table 6, pupils in schools that offer food service, seem to have higher learning participation (M=3.5317 SD=.39985) as compared to pupils in schools that do not offer food services (M=3.1529 SD=.55206). Furthermore, in Table 7, the Independent Sample t-test for equality of means indicates a Sig of .000 which is lesser than the critical value (.05). Therefore, we reject the null hypothesis and maintain that there is a significant difference in pupils' participation in learning between schools that offer and those which do not offer food services in Babati Rural District. Pupils in schools that offer food services have significantly higher mean score than pupils in schools where food service is not offered.

Table 6: Group Statistics for Effectiveness of Learning

	Is food offered at your school?	N	Mean	Std. Deviation	Std. Error Mean
LearningParticipation	Yes	175	3.5317	.39985	.03023
	NO	46	3.1529	.55206	.08140

Table 7: Independent Sample t-test for Pupils' Participation in Learning

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning Participation	Equal variances assumed	12.304	.001	5.250	219	.000	.37882	.07216	.23661	.52103
	Equal variances not assumed			4.363	57.981	.000	.37882	.08683	.20501	.55262

Therefore, it can be inferred that provision of food services propels the rate of pupils' participation in learning. This is supported by Kubik [13] who argued that food is a major facet of education and that provision of food benefits students emotionally and enhances their good performance on academics. Effective food provision in schools, therefore, leads not only to healthier children, but to improved attainment in

their studies. He also added that hunger affects concentration, but well-nourished children fare better at schools. Finally, he suggested that wherever possible, free school meals should be extended to all primary school children, starting with the most deprived areas

5. Is there significant relationship between effectiveness of food provision and pupils' active participation in learning?

This research question called for testing of a null hypothesis which states:

There is no significant relationship between effectiveness of food provision and pupils' active participation in learning.

The hypothesis was tested by Pearson Product Moment Correlation Coefficient as it can be seen in Table 8.

According to Table 8, there is a significant positive relationship between learning participation and effective food provision. Since this relationship is positive, it implies that the more effective food provision takes place, the more the pupils participate in learning. This finding is supported by Worsley [30] who claimed that healthy meals support schools' core mission of education, especially when it comes to boosting students' concentration. This shows that improved and effective nutrition in schools increase pupils' participation in learning. So the schools, parents, government and other school stakeholders should strive to sustain effective food provision in schools in order to raise the level of pupils' participation in learning.

Table 8: Correlations between Food Provision Effectiveness and Learning Participation.

		Learning Participation	Food Provision Effectiveness
Learning Participation	Pearson Correlation	1	.341**
	Sig. (2-tailed)		.000
	N	221	218
Food Provision Effectiveness	Pearson Correlation	.341**	1
	Sig. (2-tailed)	.000	
	N	218	218
**. Correlation is significant at the 0.01 level (2-tailed).			

CONCLUSIONS

This study sought to investigate the influence of food provision in pupils' participation of learning. Based on findings of this study, it can be concluded that:

1. Pupils in selected schools are provided with food; the food is provided on time and is served in clean utensils. This is something worth noting because when food services are effective, children pay attention to learning and the food improves their ability to concentrate, something which facilitates learning.
2. Distribution of food is fairly done; the amount of food is sufficient and is prepared in clean environment. Further, the food is delicious and is of good quality. This can help the learners to get the right amount of food and the clean environment can prevent eruption of diseases and accident to the pupils and cooks as they come closer to the place where food is prepared.
3. However, the food provided does not cater for balance diet and there is no variety of food given.
4. Generally, pupils actively participate in learning and extracurricular activities. They ask questions and give contributions, they participate in group assignments and they complete and return individual assignment on time.
5. However, pupils in schools that offer food services have significantly higher mean score in learning participation than pupils in schools where food service is not offered. Thus, the rate of learning participation is significantly influenced by food provision.
6. There is a significant positive correlation between effective food provision and learning participation. This implies that the more effective food provision takes place, the more participation in learning takes place.

RECOMMENDATION

Based on conclusions of this study, it is recommended that:

1. Provision of food services should be extended to all schools, both private and public in order for children to pay attention to learning and improve their ability to concentrate, something which facilitates learning.
2. Schools that provide food should continue to provide food fairly and in clean environment. This will help learners to get the right amount of food and the clean environment will prevent eruption of diseases and accident to the learners.
3. School administration should ensure provision of balanced diet and a variety of food so that

learners can enjoy the food and have better health.

4. The government authority, schools, parents and other school stakeholders should strive to sustain effective food provision in schools in order to raise the level of pupils' participation in learning.

REFERENCES

1. Hooton, T. M., Bradley, S. F., Cardenas, D. D., Colgan, R., Geerlings, S. E., Rice, J. C., ... & Nicolle, L. E. (2010). Diagnosis, prevention, and treatment of catheter-associated urinary tract infection in adults: 2009 International Clinical Practice Guidelines from the Infectious Diseases Society of America. *Clinical infectious diseases*, *50*(5), 625-663.
2. Maslow, A. H. (1943). A theory of human motivation', Psychological Review 50 (4), 370-396.
3. Gillard, D. (2003, September). Food for Thought: child nutrition, the school dinner and the food industry. In *FORUM* (Vol. 45, No. 3, pp. 111-118). Symposium Journals.
4. Chrissy C. (2014) Better Academic Performance — Is Nutrition the Missing Link? *Today's Dietitian. United* State of America.
5. Florence, M. D, Asbridge, M, and Veugelers, P. J. (2008) the *Research on Diet Quality and Academic Performance*, University of North Dakota, Washington DC, United, State of America.
6. Gamerman, E. (2008). What makes Finnish kids so smart?. *Wall Street Journal*, *29*.
7. Hoppu, U., Lehtisalo, J., Tapanainen, H., & Pietinen, P. (2010). Dietary habits and nutrient intake of Finnish adolescents. *Public health nutrition*, *13*(6A), 965-972.
8. Dike, V. (2004). The State of Education in Nigeria and the Health of the Nation. *Africa Economic Analysis*.
9. Maslow, A. H. (1954). *A Dynamic Theory of Human Motivation*. Howard Allen Cleveland, United States of America
10. Rogers, C. R. (1966). *Client-Centered Therapy.*(P. xi) American Psychological Association. United State of America.
11. Rosso, D. Joy M. and; Marek, T. (1996) *Class action: improving school performance in the developing world through better health and nutrition*. Directions in development. Washington DC; World Bank.
12. Rausch, R., (2013) Nutrition and Academic Performance in School-Age Children the Relation to Obesity and Food Insufficiency. *Journal of Nutrition and Food Sciences*. St. John's University, 300 Howard Avenue Staten Island, New York, 10301, United State of America.
13. Kubik M., (2003) the association of the school food environment with dietary behaviors of young adolescents. *American Journal of Public Health*, 93(7):1168–1173.
14. Grantham-McGregor, S. (2005). Can the provision of breakfast benefit school performance?. *Food and nutrition bulletin*, *26*(2 suppl2), S144-S158.
15. Basch, C. E. (2011). Breakfast and the achievement gap among urban minority youth. A *Journal on Child Development Perspectives*, *2*(2), 71-77.
16. Taras H. (2005).Nutrition and student performance at school. *Journal of school health*, *75*(6), 199-213.
17. Haroun, D, Harper, C, Wood, L, and Nelson, M. (2011) the impact of the food-based and nutrient-based standards on lunchtime food and drink provision and consumption in primary schools in England, *Public health nutrition Journal*, *14*(02), 209-218.
18. Kleim RF. (2002) Diet, breakfast and academic performance in children, *Journal ofAnn.nutrMetab*, United State of America.
19. Feingold, B. (1970). *Food and Nutrition*: New York: Oxford Publishers.
20. Alaimo, K., Olson, C. M., & Frongillo, E. A. (2001). Food insufficiency and American school-aged children's cognitive, academic, and psychosocial development. *Pediatrics*, *108*(1), 44-53.
21. Sjöberg, A., Hallberg, L., Höglund, D., & Hulthén, L. (2003). Meal pattern, food choice, nutrient intake and lifestyle factors in The Göteborg Adolescence Study. *European journal of clinical nutrition*, *57*(12), 1569-1578.
22. Hoyland, A., Dye, L., & Lawton, C. L. (2009). A systematic review of the effect of breakfast on the cognitive performance of children and adolescents. *Nutrition research reviews*, *22*(02), 220-243.
23. Ghosh, S. (2013). Academic performance and nutritional status-A case study on college students in North Tripura. *IOSR Journal of Research & Method in Education*, *1*, 57-68.
24. Cook, J. T., & Frank, D. A. (2008). Food security, poverty, and human development in the United States. *Annals of the New York Academy of Sciences*, *1136*(1), 193-209.
25. Grantham-McGregor, S. (2005). Can the provision of breakfast benefit school performance?. *Food and nutrition bulletin*, *26*(2 suppl2), S144-S158.
26. Brown, S. (2013) *Children Feeding Programme*. Harvard: Stanford Publishers.
27. Ann J. (1986) *Child Development*, Longman Publisher: New York.
28. K.I.E, (1998) An *Evaluation of Health and Nutritional Status of preschool children in Meru*, Kenya.
29. Pereira, P. C., and Sanchez, N. E. (2006) *Effect of Two Solanaceous Plants on Developmental and Population Parameters of the Tomato leaf miner*,

Tutaabsoluta (Meyrick Lepidoptera: Gelechiidae). Neotropical Entomology, *35*(5), 671-676.
30. Worsley, A. (2002). Nutrition knowledge and food consumption: can nutrition knowledge change food behavior? S579-S585. *School of Health Sciences*, Deakin University, Melbourne, Australia.
31. Confessore, N. (2014). How school lunch became the latest political battleground. *New York Times:* United State of America.
32. Gustafson, T., (2012) Dietitian, *Nutrition journal*, united state of America.
33. Kleinman R. E, Hall S, Green H, Korzec-Ramirez D. and Patton K. (2002) *Research on the relationships between habitual breakfast habits and performance in verbal aptitude, logical reasoning and mathematical tests in a group of well-nourished scholars*, Facultad de Farmacia, Universidad Complutense Madrid, Spain.
34. TFNC Report (2006) Tanzania Food and Nutrition Centre, *Food strategic plan* 22 Ocean Road. Box 977, Dar es Salaam, Tanzania.
35. Figlio D. N. and Joshua Winicki J. (2005) "*Food for Thought*, Northwestern University, Sheridan Road Evanston.
36. Orodho, J .A. (2003).*Techniques of writing research proposals and reports in education and social sciences*. Maseno/Nairobi: Kanezjahp Enterprises, Kenya.
37. Bell, C. C. & Jenkins, E. J. (1993) Community *violence and children on Chicago 'Southside Psychiatry*, *56*(1) 46-54.
38. Polit, E. and Hungler (1993) Does breakfast make a difference in school? *Journal of the American Dietetic Association*, 95(10), 1134-1139.
39. Grantham and McGregor, S. (2005) can the provision of breakfast benefit school performance? *Food & Nutrition Bulletin*, *26*(Supplement 2), 144-158. , Institute of Child Health, University College London, London, British.
40. Cook J.T., Deborah A. and Frank, (2008) Food *Security, Poverty, and Human Development, New York academy science, United of State of America.*
41. Olson C. M., and Holben, D. H. (2002) Position of the American Dietetic Association: Domestic food and nutrition security. *Journal of the American Dietetic Association*, 102(12), 1840-1847.
42. Franklin, A., Newton, J., & McEntee, J. C. (2011). Moving beyond the alternative: sustainable communities, rural resilience and the mainstreaming of local food. *Local Environment*, *16*(8), 771-788.