

Impact of School Feeding Program on the Academic Performance of Pupils in Moyamba Town, Moyamba District

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Abstract

This study seeks to assess school feeding program and its impact on the academic performance of primary school pupils. Using a questionnaire to collect data from Head Teachers, Teachers, Pupils and Parents from three primary schools in Moyamba town, Moyamba District Southern Sierra Leone. Impact of School Feeding Program on the academic performance of pupils in Moyamba Town, Moyamba District, Sierra Leone. The findings of the study have shown increase in school enrolment and attendance, however, there were various factors that have been mentioned that also contributed to school enrolment and attendance- the quality of teacher, fellow pupils, school uniform and school building. The findings also indicated that most teachers responded that, school feeding program impacted the age entry of pupils in school, majority of the pupils also responded that there was an increase in attendance because of the school feeding program while few said that there has been no decrease in school attendance since the commencement of school feeding program. The study showed that, school feeding positively impacted the academic performance of pupils. Furthermore, almost all the parents agreed that their children's performance in school have increased after the commencement of the school feeding program and also, majority of the pupils also supported that their participation in class was good. Furthermore, the findings revealed that, majority of the pupils always received food on time and that rice is mainly served to the pupils. The findings have also indicated that there is no relation between the type of food provided and the academic performance of the pupils, but the more effective food provision takes place; the more the pupils will perform better and that the primary school administrations and the school feeding program developers should ensure that food supplied to the pupils are adequate and contain all the nutrients crucial for the growth and development of the primary school children.

Keywords: School Feeding, Academic Performance, Academic qualification, Enrollment.

Introduction

In many poor households, hunger has been a barrier to school participation. A hunger-stricken child is not only unable to enroll in school at the right age but also cannot attend properly even if enrolled (Mkanyika, 2014). Douben (2006) also stated that children are also likely to quit school



because they have to deal with their immediate subsistence needs before they get ready for schooling. Thus, low school enrollment, low class attendance and high student drop-outs are recurring three problems in child education among poor households especially in areas of high food insecurity and because of these reasons, the level of education attainment has also been low in many developing countries although both private and social returns to education are recognized to be high (Adelman, Gilligan & Lehrer, 2009).

When children are hungry, chances that they will attend school are limited, and without education, their chances of breaking the poverty barrier are significantly reduced (DoH 2005, WFP 2006). DoH (2005) also stated that school children are particularly vulnerable to short-term hunger, especially where diets of poor-quality meal are consumed. Factors such as the long distances children walk to school, having to complete chores before going to school and poor quality and quantity of meals consumed at home, contribute to hunger in school children. Grantham McGregor (2005) indicated that although a child may be at school, he may not pay attention to a learning task if he is hungry. Even if there is a balance between the quality of teaching and the child's ability to learn, the actual time spent on the task is probably the most critical component of learning. Relieving a child's hunger may improve his ability to concentrate and thereby facilitate learning. According to the United Nations (UN) and World Food Programme, 66 million primary school age children go hungry every day, with 23 million hungry children in Africa (World food Programme, 2009).

In Sierra Leone, hunger has been a major barrier to child education. The country has historically experienced war, Ebola outbreak, flooding, mudslide etc. Thus, many primary schools age children in food insecure areas remain out of school. On the other hand, even if schooling is free of charge, families in such areas still don't have the means to cover some costs as for books, clothes, shoes or transportation. These constraints do not only keep children from participating in schools but rather force them to stay home and help parents in household chores. The implementation of school feeding Program aims at providing food to school children with the view of increasing and sustaining enrolment, attendance and minimizing drop-outs in schools. In view of such perspective, this present study was conducted to investigate school feeding program on academic performance of pupils in Moyamba Town, Moyamba District.

Materials and Method

Research Design

The study adopts the research approach using a descriptive survey to investigate the impact of school feeding program on primary school children. Descriptive survey design allows the researcher to gather information, summarizes, present and interpret for the purpose of clarification.

Target Population

The study concentrates mainly on three (3) primary schools (June Hartraft Memorial primary school for girls, St. Columba's boy's primary school and the U.M.C Central primary) in Moyamba Town, Moyamba District Southern Sierra Leone. These schools were been selected based on the provision of feeding program.

Sampling Procedure and Sample Size

Purposive sampling was used to identify the schools. A random sampling was also used to select the number of teachers, head teachers, pupils and parents in the community. The sample size is distributed as shown in Table 1.

Table 1: Sample size distribution

Respondents	Number in each school	Number of schools	Total
Head teacher	1	3	3
Teachers	10	3	30
Pupils	30	3	90
Parents	9	3	27
Total	50	12	150

The Research Instruments

The questionnaires used to collect data have both structured and unstructured questions. Questionnaires were designed for the head teachers, teachers, pupils and parents to form a major data collection tool as it allows the study to include a large sample for representativeness and inform the study on practice, opinions and attitudes of the respective respondents with regard to school feeding program on aspects of academic performance.

Data analysis techniques

The responses from the questionnaires were organized and analyzed using simple frequencies and percentages. The Pearson product-moment correlation coefficient (r) was also used to compute the relationship between the type of food and its impact on the academic performance of pupils.

RESULTS

Academic qualification of Teachers and Head Teachers

Table 1 below shows the academic qualification of teachers and head teachers. Results revealed that table, 86.2% of the teachers (25) have undergone through training on how to handle the primary school children. The result also shows that all the head teachers (100%) in the three



schools have certificates; 21 teachers have certificates, 2 teachers have diploma and 2 teachers have Bachelor's Degree and only 4 out of the 29 teachers who took part in the research have not gone through any training pertaining primary school education. From the study, it can be said that the academic qualification of the children improves with the academic qualification of the teacher. The academic qualification of primary school teachers and head teachers greatly influence the academic performance of primary school children.

Qualification	Frequen	cy	Total	Percentage (%)
	Head Teachers Teachers			
Certificate	3	21	24	75%
Untrained		4	4	12.5%
Diploma		2	2	6.3%
Bachelor's Degree		2	2	6.3%
Total	3	29	32	100%

Table 1: Academic Qualification of Teachers and Head Teachers

Teaching Experience of Head Teachers and Teachers

Experience is one of the crucial factors in every field, according to Barnabas (2014)," teachers with experience understand the influence of the balanced school feeding program on academic performance, they have the skills and knowledge on how to handle children from different background and different personalities to fully developed in to adult hood, that is, they help them reach full developmental potential psychologically, emotionally, physically and socially". Results pertaining to teaching experience shows that majority of the teachers (44.8%) had been in their present working stations between 6-10 years, 24.1 percent between 16-20 years, 13.8 percent 5 years and below, 10.3 percent 21 years and above and 6.9 percent between 11- 15 years. Among the head teachers, 66.7 percent had worked for 21 years and above while 33.3 percent had worked between 11-15 years, table 2.

Table 2: Teaching Experience of Head Teachers and Teachers

Teaching Experience	Head Teacher		Teachers		Total	
	Frequency	%	Frequency	%	Frequency	%
5 years below	-	-	4	13.8	4	12.5



6-10	-	-	13	44.8	13	40.6
11-15	1	33.3	2	6.9	3	9.4
16-20	-	-	7	24.1	7	21.9
21 and above	2	66.7	3	10.3	5	15.6
Total	3	100	29	100	32	100

4.2.1.4: Occupation and Marital Status of Parents

The unemployment rate of parents is a contributory factor to pupil's enrolment and performance in schools because it is difficult for parents who are not employed to send their children to school and to provide for them as well. Figure 1 below shows the distribution of parents who are employed and those who are unemployed.

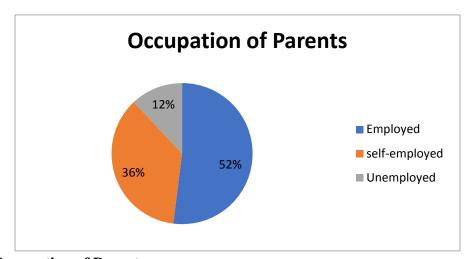


Figure 1: Occupation of Parents

Results Figure 1 above indicated that majority, 52% of the parents are employed, 36% are self-employed while only 12% of the respondents are unemployed. These unemployed parents depend on pensions and social grants for their survival. This confirms what Potterton and Dawjee (2004) said that this situation makes it difficult for these parents to provide adequate and nutritious meals for their children.

When asked about their marital status, 60% indicated that they were single while 40% said they were married

The level of enrolment before and after the commencement of school feeding program

The level of enrolment before and after school feeding program is shown in Table 2. Result indicated that 944 (23.5%) of pupils were enrolled in 2014, 974 (24.3%) in 2015 before the



commencement of school feeding program. However, this number increased to 1,053 (26.2%) in 2016 and 1,041 (25.9%) in 2017. As compared to the 2014 academic year, enrolment for 2016 increased sharply owing to factors explained by the head teachers, teachers, pupils and parents.

	Year	U.M.C Central			Iune Hartraft Memorial		St. Columba's		Total		Percent age	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total		
4)	2014	119	200	-	400	225	-	344	600	944	23.5	4)
Before	2015	120	201	-	413	231	-	351	623	974	24.3	Before
	2016	118	260	-	418	257	-	375	678	1,053	26.2	
After	2017	123	258	_	400	260	-	383	658	1,041	25.9	After
•	Total	480	919	-	1,631	973	-	1,453	2,559	4,012	99.9	•

Birdsall and Levine (2005) pointed out that addressing educational enrolment is critical in promoting education. All the head teachers (100%) indicated that the enrolment had increased after the introduction of School feeding Programme. They were also asked to give reasons for their responses, all responded that "School Feeding had encouraged majority of parents to enroll their children to school at an early age.

Table 1. Level of enrolment before and after the commencement of SFP

The figure 1 shows that 51.7 percent of parents enrolled their pupils to school mainly because they knew that their children will have meals while at school instead of staying at home, 17.2 percent said that they enroll their pupils to school because of the quality of teachers, 13.8 percent said because of their fellow pupils, 6.9 percent responded school uniform and any others while 3.5 percent said because of the school building.



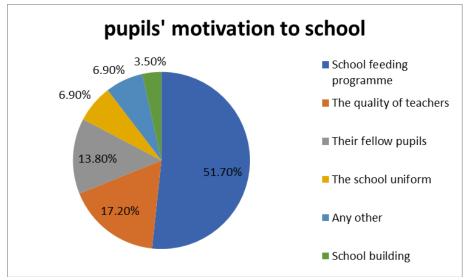


Fig 1: Shows Pupils Motivation to School

They also stated that the increase in school enrolment was attributed to the introduction of SFP at various primary schools, by saying, "Parents had been motivated to enroll their children without being forced by the school management". Findings in Figure 2 shows the responses of the teachers. Results revealed that, most teachers, 82.8% responded that school feeding program impacted the entry age of pupils in school, 10.3% said that school feeding program has no effect on the entry age of pupils in school while 6.90% responded that children are still enrolled to school at late age.

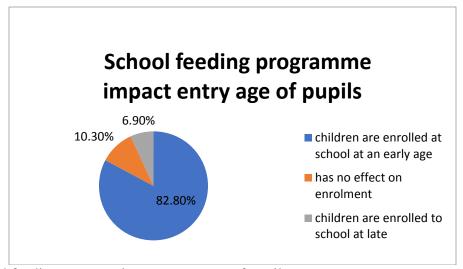


Fig 2: School feeding program impact entry age of pupils

The pupils were also asked to give their opinion on the impact of school feeding program on attendance. The figure 3 indicated that majority of the pupils (93.30%) responded that there is an



increase in attendance because of the school feeding program while few (6.70%) said that there has been a decrease in school attendance because of the school feeding program.

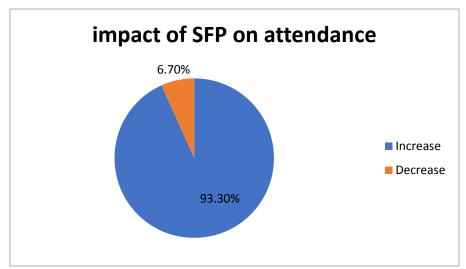


Fig 3: Impact of SFP on attendance

Head Teachers, Teachers and Parent were also asked to give their opinion on pupil's attendance when the school feeding program is in progress. The findings are indicated in the table 2 below.

Table: 2: Head Teachers, teachers and Parents opinion on attendance to school when

Level of Attendance	Teachers		Head Teachers		Parents		Total	
	Frequency	%	Frequency	%	Frequenc y	%	frequency	%
Very high	16	28.1%	1	1.8%	8	14.0%	25	43.9%
High	13	22.8%	2	3.5%	15	26.3%	30	52.6%
No effect					2	3.5%	2	3.5%
Total	29	50.9%	3	5.3%	25	43.8%	57	100%

From table 2 above, 16 teachers (28.1%) indicated that pupil's attendance to school is very high when the school feeding program is in progress, 13 teachers (22.8%) said school attendance is high. Responses from the head teachers also indicated that 1 out of the 3 head teachers responded that school attendance is very high when the school feeding program is in progress, and 2 said school attendance is high when school feeding program is in progress. Parents were also asked to give their opinion on the level of attendance when the school feeding program is in progress, Majority (26.3%) said school attendance is high, 14.0% said school attendance is very high, while only 3.5% said that school feeding has no effect on school attendance.



Pupils Academic Performance Level before and after the Commencement of the School feeding.

The data pertaining to responses from head teachers regarding their school's examination results from 2014- 2017 is shown in table 3.

Table: 3. Examination Results before (2014- 2015) and after (2016- 2017) the commencement of School Feeding Programme

	Year	UMC	Central		Iartranft rial Girls	St. Col Boys	umba's	Perce	entage	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
-e	2014	75%	61%		95%	60%		46.4%	41.6%	le le
Before	2015	71%	68%		95%	65%		45.5%	54.5%	Before
r	2016	80%	81%		100%	80%		46.9%	53.1%	ı
After	2017	82%	90%		100%	82%	••••	46.3%	53.7%	After

The findings from table 3 above indicated that in 2014, the average performance of pupils in UMC Central was 75% boys and 61% girls; the average performance of pupils in June Hartranft Memorial was 95% and 60% in St. Columba's. In 2015, the average performance of pupils in UMC Central was 71% boys and 68% girls, in June Hartranft; there was 95% and 80% in St. Columba's. There was an increase in the performance of the pupils after the commencement of the school feeding program in 2016-2017. In 2016, the average performance of pupils in UMC Central was 80.5%, 100% in June Hartranft and 80% in St. Columba's. In 2017, the average performance of pupils in UMC Central was 82% boys and 90% girls, 100% in June Hartranft and 82% in St. Columba's.

Opinion of teachers and head teachers on the effect of school feeding program on pupil's academic performance

Furthermore, head teachers and teachers were asked to give their opinion on the effect of school feeding on pupil's academic performance and their responses are recorded in the table 4 below. The findings indicated that, 17 teachers out of 29 strongly agreed that there has been an improvement in pupil's performance in both curricular and extra- curricular activities, 10 agreed and 2 un-decided while 2 head teachers out of 3 said they strongly agreed to the statement and 1 undecided. When asked to give their opinions on pupils' performance in end of term and session exams, 18 teachers said they strongly agreed that it has improved, 8 agreed,1undecided and 1 strongly disagreed to the statement while all the 3 head teachers agreed that pupils' performance



in end of term and session exams has improved. In addition, 13 teachers strongly agreed that pupils' performance in class tests has improved, 1 agreed, 1, undecided,1 disagreed and 2 strongly disagreed while 2 head teachers agreed to this and one 1 undecided. Lastly, 5 teachers strongly agreed that pupils' performance in class tests /exams has nothing to do with school feeding program, 3agreed, 3 undecided, 4 disagreed and 15 strongly disagreed while 1 head teacher disagreed and 2 strongly disagreed that pupils' performance in class tests /exams has nothing to do with school feeding.

Table 4. Opinion of teachers and head teachers on the effect of school feeding program on pupil's academic performance

Statements							1	Frequ	ency	
	Strongly Agreed		Agreed		Undecided		Disagreed		Strongly Disagree	
	T	H T	T	НТ	T	HT	Т	HT	T	HT
There is improvement in pupils' performance in both curricular and extra-curricular activities	17		10	2	2	1				
Pupils' performance in end of term and session exams has improved	18		8	3	1		1		1	
Pupils' performance in class tests has improved	13		11	2	1	1	1	1		2
Pupils' performance in class tests /exams has nothing to do with school feeding	5		3		3		4	1	15	2

The pupil's opinion about their participation in class when the school feeding program is in progress and their responses are indicated in figure 4. The result shows that, 35.60% of the pupils said their participation in class was very good, majority (55.60%) indicated that their participation in class is good, 5.60% said fair and only 3.30 % said that their participation in class is bad.



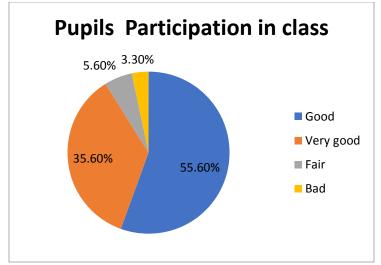


Fig 4: Pupils Participation in Class

Frequency of food provided

Pupils were further more asked about the frequency of food because the number of times food is served also has been found to further positively influence academic performance figure 5. This is in line with Daniel Otieno, 2014 that proper frequency of nutrition enhances academic performance. School feeding programs have shown the effective role of nutrition in enhancing academic performance proper frequency of School feeding Programs improves school performance.

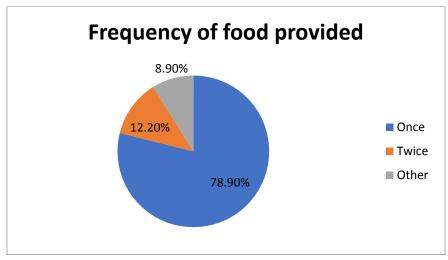


Figure 5: Frequency of food provided.



The type of food provided

The study also investigated the type of food provided for the children; this is in accordance with Bowlby 1988 who said that, children should be given the right food to enhance their growth, development and survival in the community. Table 5 below shows the type of food served to the primary school children. Result revealed that, 40.8% of the respondents said the pupils were served with rice, 25.9% indicated any other, 16.3% said the pupils were served with porridge, 12.2% said cassava while only 4.8% said bulgur. Also, from the table, it is observed that rice is mainly served to the pupils.

Table 5: The Type of Food Provided

Food		Total			
	Head	Teachers	Pupils	Parents	
	Teachers				
Rice	2 (1.36%)	18 (12.24)	30 (20.41%)	10 (6.80%)	60 (40.8%)
Any other	1 (0.68%)	5 (3.40%)	26 (17.69%)	6 (4.08%)	38 (25.9%)
Porridge		4 (2.72%)	15 (10.20%)	5 (3.40%)	24 (16.3%)
Cassava		2 (1.36%)	13 (8.84%)	3 (2.04%)	18 (12.2%)
Bulgur			6 (4.08%)	1 (0.68%)	7 (4.8%)
Total	3 (2.0%)	29 (19.7%)	90 (61.2%)	25 (17.0%)	147(100%)

Cross-tabulation of the type of food provided and the academic performance of pupils.

The type of food provided and the academic performance of the pupils were analyzed and cross tabulated as shown in the table 6. This was done to find out whether there was a relationship between the food provided and the academic performance of the pupils.

Table 6. Cross tabulation of the type of food and academic performance of pupils

Academic Performance of Pupils

Type of food	Very Good	Good	Bad	Total
Rice	16 (17.8%)	13 (14.4%)	1(1.1%)	30 (33.3%)
Any Other	6 (6.7%)	15 (16.7%)	5 (5.6%)	26 (28.9%)
Porridge	2 (2.2%)	12 (13.3%)	1 (1.1%)	15 (16.7%)
Cassava	7 (7.8%)	6 (6.7%)	-	13(14.4%)
Bulgur	3 (3.3%)	2 (2.2%)	1 (1.1%)	6 (6.7%)
Total	34 (37.8%)	48 (53.3%)	8 (8.9%)	90 (100%)



Result from the table above indicated that 30 (33.3%) of the pupils were serve with rice, 16(17.8%) of them said their performance was very good in class, 13(14.4%) said that their performance was good; only 1(1.1%) said their performance was bad in class. While 26 of the respondents indicated others, they were also asked to specify, they responded gari, Foo-foo, potato, couscous etc. It was found out from the studies that, 6(6.7%) perform very well in class, 15(16.7%) said that their performance was good and 5 (5.6%) indicated badly. Furthermore, 15 pupils responded porridge, while 2(2.2%) said their performance was very good in class, 12(13.3%) said their performance was good while only 1(1.1%) said they perform badly. 13 responded cassava, out of the 13 that respondent cassava, 7 said they perform very well in class and 6 said good. Lastly, only 6 indicated Bulgur, 3(3.3%) who were serve with bulgur said their performance was very good, 2(2.2%) indicated that their performance was good and 1(1.1%) indicated they perform badly.

Relationship between the type of food provided and the academic performance of pupils

The study finds out the relationship between the type of food provided and its impact academic performance. The findings showed that there is a negative correlation between the type of food provided and the academic performance of the pupils (r=-.105). However, the more effective food provision takes place, the more the pupils will perform better (r=.325), table 7.

Table 7: Correlation analysis of the type of food and academic performance

		Academic Performance Pupils when the Feeding Program is in Progress	Type of Food Provided
Academic Performance Pupils when the Feeding	Pearson Correlation	1	105
Program is in Progress	Sig. (2-tailed)		.325
	N	90	90
Type of Food Provided	Pearson Correlation	105	1
	Sig. (2-tailed)	.325	
	N	90	90

Discussions of Findings

The levels of enrolment and attendance before and after the commencement of the school feeding program



The findings showed that there are more female teachers (10.9%) than male teachers (8.8%) in the schools, these findings therefore support the observation made by Mahama, 2017; the female teachers can serve as role models for girls in school. This can be a motivation for girls to enroll and attend school regularly. The study also showed that, majority of respondents (head teachers, teachers, pupils and parents) showed that there was an increase in enrolment and attendance after commencement of School Feeding Programme. However, there were various factors that have been mentioned that contributed to school enrolment and attendance, the quality of teacher (17.20%), fellow pupils (13.80%), school uniform (6.90%) and school building (3.80%). Also from the studies, most teachers, 82.8% responded that school feeding program impact the age entry op pupils in school. This study is similar to the research conducted by WFP (2000), which showed generally, the provision of food to pupils at school encouraged those not in schools to be in school. This is also in line with Adelman, Gilligan et al. 2008, that along with enhancing enrolment, School Feeding Programs also help to adjust the age at entry by attracting children during their right age. From the study, majority of the pupils (93.30%) responded that there is an increase in attendance because of the school feeding program while few (6.70%) said that there has been a decrease in school attendance because of the school feeding program. This study is in context with the research carried out in Burkina Faso by Alderman (2009) that both Taking Home Ration (THR) and School Feeding Program (SFP) interventions had a statistically significant impact on the overall enrolment and attendance of girls. Del Rosso (1999) also asserted that the provision of food acted as a strong incentive for children to attend school on a regular basis.

The Effects of School Feeding Programme on the Academic Performance of Pupils

The study observed that there was an increase in the performance of the pupils after the commencement of the school feeding program in 2016-2017. The study also showed that all the 29 teachers (100%) indicated that, school feeding has positively impacted the academic performance of pupils. Furthermore, almost all the parents (96%) agreed that their children's performance in school have increased after the commencement of the school feeding program, while only 4% said that there has not been any increase in their children's performance. Also, 35.60% of the pupils said their participation in class was very good, majority (55.60%) indicated that their participation in class is good, 5.60% said fair and only 3.30 % said that their participation in class is bad. These findings are in line with the claim made by Yunusa (2012) that students in School Feeding Programs have the potential for improving their performance because it enabled them attend school regularly and studied more effectively. Drawing from this, Uduku (2011) opined that SFPs would best improve the performance of pupils when coupled with adequate learning materials, physical facilities and teacher motivation. Also, these findings are similar to the study carried out by Briggs (2008) which linked school feeding and learning because it increased learner's awareness, activeness and improved learning capacity.



Relationship between the type of food and its impact on the academic performance of pupils

The findings revealed that, majority (83.3%) responded that they always received food on time, while a lesser percent (16.7%) indicated that they do not always receive food on time. The findings also showed that 78.9% of the pupils who took part in the research were served once a day, 12.2% were served twice a day while 8.9% indicated others. The study also investigated the type of food provided for the children, from the findings, 40.8% of the respondents said the pupils were served with rice, 25.9% indicated any other, 16.3% said the pupils were served with porridge, 12.2% said Cassava while only 4.8% said bulgur. It is observed that rice is mainly served to the pupils. According to Bowlby (1988), food quantity and quality should be looked into. Children should be given right nutrients to enhance their growth, development and survival in the community. He also argued that the frequency of the meals should be noted. Food should be served regularly and the schools set good designs and program to affect this. Erickson (2006) also pointed out that eating a carbohydrate-heavy meal can cause one to feel calmer and relaxed because of a brain chemical called serotonin and its effect on mood. Serotonin is created within the brain through the absorption and conversion of tryptophan. Tryptophan is absorbed within the blood and this absorption is enhanced with carbohydrates. Madeley, 2002 also affirmed that providing pupils with food therefore helped them to increased attention and concentration in their learning. Barnabas (2014) also agreed that cases of poor academic performance among the primary school children can greatly be reduce by the type of food provided. Provision of school feeding program with well-balanced diet, adequate meals and well-timed provision of meals to the children to alleviate short term hunger this possibly improving children ability to concentrate and learn. He continued that unbalanced diet provided in the school feeding program was found to affect children's academic performance. The nutrients essential for development and general well-being should be provided in order to promote the general well-being of the children. The correlation analysis of the study showed that the type of food provided had a negative (r = -.105)correlation to the academic performance of the pupils. However, although the correlation of the type of food provided was negative (r = -.105), the more effective food provision takes place, the more the pupils will perform better (r=.325). This does not support the observation made by Madeley, 2002, which said that, providing pupils with food therefore helped them to increased attention and concentration in their learning.

Conclusion

The study aimed at assessing the impact of School Feeding Program on the academic performance of primary school pupils in Moyamba Town, Moyamba District, Southern Sierra Leone. The study findings revealed positive results in an improvement on pupils' enrolment and attendance after the commencement of school feeding program. However, various factors such as the quality of teacher, fellow pupils, school uniform and school building contributed towards school enrolment and attendance for pupils. School feeding program in Moyamba district has shown positive influence on pupils' academic performance. The respondent (head teachers,

teachers, pupils and parents) supported the opinion that school feeding has increase pupils' participation in class. Generally, the findings discovered that there is no relationship between the type of food provided and the academic performance of the pupils, but the more effective food provision takes place; the more the pupils will perform better.

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