

Effect Of School Feeding Programme On Enrolment, Attendance And Pass Rate Of Pupils: A Case Of Nakatindi Community School In Livingstone.

Mulungushi University Multidisciplinary Journal
Vol. 1 no. 1

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<https://research.mu.ac.zm/research/index.php/mu>

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Abstract

In developing countries, almost 60 million children go to school hungry and about 40 percent are from Africa (Akambi, 2013). School Feeding Programmes (SFP) are interventions that deliver a meal to children in the school setting, with intent of improving attendance, enrolment, nutritional status and learning outcomes. A study was conducted at Nakatindi Community School in Livingstone to elucidate the effect of the SFP on pupil enrolment, attendance and pass rate. The objectives of the study were to determine the levels of pupil enrolment before and after commencement of the SFP; determine the main reasons for the attendance of pupils; examine the pass rate of pupils before and after the initiation of SFP. Quantitative and qualitative research methods were used for data collection. The study sample was 300 pupils, parents and teachers, selected using simple random and purposive sampling. The research showed that pupil enrollment at Nakatindi Community School was influenced by the SFP with 60% of the parents stating that they enrolled children at Nakatindi Community School because of the SFP. The reasons for pupils attending school were to learn (47%) and SFP (40%). The pass rate was statistically insignificantly influenced by the SFP. In this regard the school feeding programme alone cannot influence the stated positions in its entirety but that other factors also contribute to the pupils' school attendance and pass rate according to the results that the research obtained.

Keywords

School Feeding Programme, enrolment, attendance, pass rate.

INTRODUCTION

In developing countries, almost 60million children go to school hungry every day and about 40 percent of them are from Africa (Akambi, 2013). School feeding programmes are interventions that deliver a meal or snack to children in the school setting, with the intent of improving attendance, enrolment, nutritional status and learning outcomes. A programme of providing free food to pupils is what constitutes the School Feeding Programme (SFP). School feeding programs have been described by the World Bank as “targeted social safety nets that provide both educational and health benefits to the most vulnerable children, thereby increasing enrollment rates, reducing absenteeism, and improving food security at the household level.” Beyond improvements in access to food, school feeding programs also have a positive impact on nutritional status, gender equity, and educational

status, each of which contributes to improving overall levels of human and national development. School feeding programmes have been established in large parts of developing countries all over the world, with a view of improving general socioeconomic conditions as well as providing educational and nutritional benefits to participants. Recent reviews show that school feeding programmes have a significant positive effect on growth and cognitive performance in children. School feeding programmes constitute critical interventions that have been introduced in many developed and developing countries of the world to address the issue of poverty, stimulate school enrolment and enhance pupils' performance. Providing school meals is therefore vital in nourishing children. Parents are motivated to send their children to school instead of keeping them at home to work or care for siblings (Akambi, 2013). The introduction of the school feeding programme is traced to

the Millennium Development Goals (MDGs 2015) initiative. The African leaders at the 2015 Africa Union Assembly resolved to tackle issues, such as peace, security, good economic, political and corporate governance and to make the continent an attractive destination for foreign investment. Some of these developments include the 'New Partnership for African Development' which according to the blueprint is a pledge by African leaders, based on common vision and a firm and shared conviction, to eradicate poverty and to place their countries on the path to sustainable growth and development and, at the same time, to participate actively in the world economy and politics. Also, the 'Comprehensive African Agriculture Development Programme' and the 'Millennium Hunger Task Force' amongst others were initiatives which were designed to link school feeding to agricultural development through the purchase and use of locally produced food (Bundy et al, 2009).

PROBLEM STATEMENT

School feeding programs as a social safety net have been popular in developing countries including Zambia as an instrument for achieving the Sustainable Development Goals particularly goal 1: No poverty, goal 2: Zero hunger, goal 4: Quality education and goal 5: Gender equality, (UNDP, 2016). These programs frequently target populations that are food insecure and reside in areas with high concentration of families from low socioeconomic status and schools that face poor attendance and enrollment of pupils such as Nakatindi Community School. It is for this reason that this study was deemed necessary to assess the effect of such a school feeding programme on enrolment, attendance and pass rate of pupils at Nakatindi Community School in Livingstone.

Nutrition Situation in Zambia

The Republic of Zambia is a landlocked country in Southern Africa with a sub-tropical climate. It is sparsely populated compared to some of the neighbouring countries. The population is young and predominantly rural. Zambia is severely affected by the HIV and AIDS pandemic, which compromises social and economic gains the country is striving to attain. Mostly as a result of the pandemic, life expectancy at birth has dropped sharply. Zambia's economy has been traditionally dominated by the copper mining industry. However, following a sharp decline in copper earnings, the contribution of the agricultural sector to Gross National Product- GDP has been increasing. Zambia has a huge agricultural potential, still largely untapped (ZDHS, 2007). The majority of the population is engaged in rain-fed subsistence farming. Reduced state support in the 1990s led to a shift in crop production from maize, the staple food crop, to other crops (cassava and cash crops), but maize is still predominant.

Livestock production remains far below its potential, notably due to recurrent drought and outbreaks of diseases. Zambia has experienced uninterrupted economic growth since 1999. The incidence of poverty has decreased since the beginning of the current decade, but poverty remains widespread. The high incidence of infectious diseases and of nutritional deficiencies, the somewhat declining immunisation coverage and the limited access to improved water sources in rural areas are the major factors contributing to high morbidity and mortality among young children. Access to health services remains limited, the lack of material and human resources in the health system further constraining the quality of services. Although some progress has been recorded, infant and under-five mortality rates still remain high (UNICEF, 2011).

The Zambian diet is mainly composed of cereals, predominantly maize, starchy roots and, to a lesser extent, fruit and vegetables. Cereals provide almost two-thirds of the dietary energy supply. Although other food crops are becoming increasingly important, such as cassava, Zambia's dependence on maize remains very high which contributes to making it vulnerable to climatic shocks. In urban areas food consumption patterns are changing: rice and Irish potatoes are gaining importance. A consistent decline in maize production, inadequate production of alternative staple crops, climatic constraints, and poverty contribute to widespread food insecurity. The dietary energy supply is not sufficient to meet population energy requirements; the prevalence of undernourishment had increased to reach 45% in 2005 (DFID, 2010). Quantitatively insufficient food supplies also lack diversity and are poor in essential micronutrients

Food Nutrients and their Functions

Foods provide energy and nutrients required for growth, body maintenance, activity reproduction and lactation, they also provide nourishment and protection from diseases. So far the maintenance of healthy growth and development of children's knowledge of food groups and their function is quite crucial (K.I.E, 1998). The carbohydrates are obtained from cereals such as maize, millet, wheat, rice and tubers. The carbohydrates provide energy, heat and protect the body. The deficiency of carbohydrates make the body weak. The proteins are body building food obtained from peas, beans, nuts, meat, fish, beef, insect and chicken. The proteins repair worn out tissue and body building. The lack of proteins leads to kwashiorkor and detested stomach. A healthy diet is what makes a healthy person. When one is healthy, we often think of mental alertness, energy, good sight and sparkling eyes on the side of a child.

Nutritional Programme for School Children

In Kenya a joint government and world food program undertaking provides a mid-day meal to preprimary and primary school children in semi-arid and arid areas of the country. The government of Kenya provides yearly grant to the National school feeding council to supplement contributions from other non-governmental organizations and individuals. Another school feeding programme ran by the National School Feeding Council of Kenya has revised its policy in recent years rather than provide meals to school children in needy areas, it encourages school feeding programs in areas in which parents can afford to maintain them. The main objective of these feeding activities is to provide food supplements to pre-primary and primary school children in order to help improve their health and nutritional states and provide them the energy to participate in school. Feeding begins during programme when the expectant mother eats sufficient proteins, fresh fruits, carbohydrates and vegetables to supply enough nourishment for her and the developing fetus. There is evidence that early quality care improved brain size, complexity and show increase in dendrite, breathing, growth in support gland cells and capillaries.

Good nutrition which contains all the necessary food substances does not need to be expensive neither does it mean all the times and all meals are balanced but simply means over the course of several days the body needs to take enough substance to grow and stay healthy. Nourishing foods are often less expensive than high calories food. Research on school age children investigating the relationship between health, nutrition and school performance indicated that children who are healthy and well-nourished had better peers academic performance than their peers who are sick and poorly nourished. There is an effect of feeding on development of the body and brain (KIE, 1990). No child can develop his or her brain to the maximum without feeding properly. Proper nutrition in the first years increases potentials for doing well in school and having a successful life. Notably, a child has contentious individualized process of change in complex levels of cognitive, emotional, social and body movement and speech if the diet of a child is of nutritious value (Crawford, 1990).

Vanvynckt (2006) provided an overview of the current state of knowledge about nutrition and health conditions on learning and school participation. She indicated over the past few years there has been an accumulation of research findings from different countries documenting association between nutrition, health and children school participation. A number of prevalent nutrition and health conditions are shown to affect school participation and educational outcomes for instance recent studies from

Kenya and a number of other countries report significant findings on the relationship between poor health, nutrition and school outcomes. Consequently, better nutritional history and present nutritional status are associated with higher cognitive test scores or better school performance. Nutritionally stunted children are found to enroll later and drop out earlier than their normal size peer. Professor Michael Crawford (1990) has undertaken a good deal of research in the pre-conception nutrition and its effects on the future of the child in the institute of brain chemistry and human nutrition which says that poor nutrition during early phase of brain development affects the brain permanently.

Theoretical Framework

Theoretical framework is a collection of interrelated ideas based on the theories attempting to clarify why things are the way they are based upon theories introducing new views of the research problem allowing understanding the realms of the problem and helping to conceptualise the topic, (Kombo and Tromp, 2006).

Maslow's Hierarchy of Needs

Maslow's hierarchy of needs is often portrayed in the shape of a pyramid with the largest, most fundamental levels of needs at the bottom and the need for self-actualization at the top. The most fundamental and basic four layers of the pyramid contain what Maslow called "deficiency needs" or "d-needs": esteem, friendship and love, security, and physical needs. If these "deficiency needs" are not met, with the exception of the most fundamental (physiological) need there may not be a physical indication, but the individual will feel anxious and tense. Maslow's theory suggests that the most basic level of needs must be met before the individual will strongly desire the secondary or higher level needs. Physiological needs: Physiological needs are the physical requirements for human survival. If these requirements are not met, the human body cannot function properly and will ultimately fail. Physiological needs are thought to be the most important; they should be met first. Air, water, and food are metabolic requirements for survival in all animals, including humans. Clothing and shelter provide necessary protection from the environment.

Safety needs: Once a person's physiological needs are relatively satisfied, their safety needs take precedence and dominate behavior. In the absence of physical safety due to war, natural disaster, family violence and childhood abuse, people may (re-)experience post-traumatic stress disorder or trans generational trauma. In the absence of economic safety due to economic crisis and lack of work opportunities these safety needs manifest themselves in ways such as a preference for job security, grievance procedures for protecting the individual from unilateral

authority, savings accounts, insurance policies and disability accommodations. This level is more likely to be found in children as they generally have a greater need to feel safe.

Maslow's Hierarchy is directly related to learning through motivation. In order for students to succeed in the classroom, they must be motivated to learn. When all levels of Maslow's Hierarchy of Needs are met, students are at their full potential for learning (McLeod, 2007). For example, a student would not be able to enter a classroom with an empty stomach and the fear of dying from starvation and successfully learn. Each student has needs that must be met in order to maximize attendance, learning and performance in school. The higher up in the hierarchy a student is, the more levels that are met, the better the motivation and therefore the more learning that the student will experience. It is essential to mention at this point that there are exceptional cases where the lack of basic needs motivates the child to work extra hard in school to get out of poverty as the saying education is an equalizer.

In many community schools in Zambia, students suffer with difficulty in school because basic needs of Maslow's Hierarchy of Needs are not being met. These students are typically students of low-socioeconomic status, because students of low-socioeconomic status are not learning at the same rate as their peers, they are often mislabeled as learning disabled. Many times, however, these students are simply not having the lower levels of Maslow's Hierarchy of Needs met. Many of these students may be too worried about when their next meal is to even worry about what they are learning in school. It is important to separate true learning disabilities from students who just need to have their basic needs in life met in order to learn. By separating these two populations, the student's needs for learning can more easily be met by the school.

Physiological needs like food can preoccupy a student if not met. When learners are preoccupied with these concerns, learning and achievement are regularly put aside. This is because the current concern of food is driving the learner's behavior. When learners are concerned about certain needs, their behavior is centered on meeting those needs. Other concerns will then take precedence over learning and achievement. The provision of food at school help learners satisfy needs, so the focus can be on content, learning, and achievement.

School Feeding Programmes in Zambia

Since independence, efforts have been made by the Zambian Government and some Non-Governmental Organisations to address the issue of low rates in school enrolment, attendance and performance of pupils. The government made efforts with production

unit, young farmers club, school and health education and now, the School Feeding Programme (SFP), which was initiated by the World Food Programme (WFP) in conjunction with the Ministry of Education (MoE). The purpose of the school feeding programme was to improve school enrolment, attendance and performance in the most drought prone and insecure areas with low educational indicators. It is believed that this would avert short-term hunger, encourage children to continue attending and enhance their concentration and academic performance.

It was estimated that close to 90% of pupils in the 18 worst drought-affected districts in the country were attending school irregularly or staying away from school during periods of hunger (WFP, 2001). School Feeding is the distribution of food to Primary day-school children. "It is an intervention that can prevent short-term hunger and improve school enrolment, attendance and performance," (FAO, 2015). Many Zambian children go without a meal. They walk long distances to school and when they arrive, they are hungry and restless. They find it difficult to concentrate on learning. Many other children cannot enroll at all thus forced to work, look for food or help with family chores. School becomes less of a priority. Even when they do enroll, many are partly absent; reducing their learning capacity and academic performance. On July 1, 2003, a pilot project of school feeding programme was commenced in 30 schools in three most drought-affected districts (Sinazongwe, Siavonga and Gwembe) in Southern Province. Furthermore, in September 2003, the programme was expanded to include 10 schools in Livingstone, Southern Province and Chadiza District in Eastern Province. The WFP Zambia, in cooperation with the MoE was then providing hot nutritious meals of High Energy and Protein Supplement (HEPS) to over 280 000 children in 829 schools situated in the most drought prone and food-insecure areas with low educational indicators. These were: Sesheke and Mongu (Western Province), Kazungula, Kalomo, Gwembe, Livingstone, Sinazongwe, Siavonga, and Monze (Southern Province), Lusaka, Kafue and Chongwe (Lusaka Province), Nyimba, Petauke, Chipata, Mambwe and Chadiza (Eastern Province). Children in all these areas cited received porridge upon arrival at school every day.

Access to basic education has improved in a large number of countries, but children from low income families have benefited much less than those from high income families. A study conducted by UNICEF revealed that nearly 120 million primary school-age children, mainly in low income countries were not in school in 2003; 53% of whom were girls (UNICEF, 2009). The children of the poorest families were least likely to have access to primary education, with girls more likely than boys

to be kept at home. Children from families living on poverty incomes, often start work at the age when their better-off-counterparts are beginning to read. One in six children between the ages of 5 and 14 (about 211 million children) were doing some form of work in 2000, of these, about 186 million children were engaged in forms of child labour (ILO, 2003). An analysis from WFP's Food for Education Programme which provided food to 21.7 million children in 74 countries in 2005 indicates a 14 percent yearly increase in school enrolment for both boys and girls in 4,175 WFP-assisted schools in 32 Sub-Saharan African countries. Furthermore, the UN global monitoring report revealed that providing children with take-home rations in addition to school meals was accompanied by a sustained increase in enrolment in these 32 countries and apparently was particularly beneficial for girls in the higher primary school grades (WFP, 2016).

Based on this literature reviewed, there was therefore need to investigate the effect of the SFP on enrolment, attendance and pass rate of pupils at Nakatindi Community School in Livingstone.

RESEARCH DESIGN

The study employed both the qualitative and quantitative research designs. Qualitative is a form of research that involves description. The reasons for using this method was that the respondents were describing their everyday experiences relating to SFP and it relies on a research strategy that is flexible and interactive. Quantitative research methodologies are those dealing with data that are principally numerical. In quantitative research there is no place for subjectivity. It is associated with accuracy, stability and consistency. These approaches to research are complementary hence, they were combined to maximise the strengths and minimise the limitation of each.

TARGET POPULATION

The target population for the study comprised Pupils, the Head Teacher and Teachers at Nakatindi Community School, Debs Officers, Parents and Sponsors of the SFP from Sussi and Chuma Lodge.

SAMPLING PROCEDURE AND SIZE

The approach of the research was both qualitative and quantitative. Two sampling techniques which are Probability sampling technique and Purposive sampling technique were used. Hence the sample was divided into five groups. The Probability sampling technique of Simple Random sampling was used for sampling the pupils. The Simple Random sampling was applied so that each object had an equal chance of being sampled. The total population of pupils was 864 thus a sample size of

266 was used with a margin error of 5% and 95% confidence level. The sample size was arrived at using the online sample size calculator using the formula;

$$S = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Where: Z = Z value (1.96 for 95% confidence level)

p = percentage of picking a choice, expressed as decimal (.5 used for sample size needed),

c = confidence interval, expressed as decimal (e.g., .04 = ±4).

The Class registers from 15 classes were used to select pupils; every 3rd pupil on the register was picked on the count of 1 to 3. Purposive sampling technique was also used for sampling key informants who were the Head Teacher, Teachers, and Officers from DEBS office, Parents and the SFP Sponsors. Purposive sampling was applied so as to purposely select the Head Teacher of the school, Teachers, specific Officers from DEBS, Parents to children and the Sponsors of the SFP at the school. These were picked by virtue of their positions. The total sample size comprised 266 pupils, one Head Teacher, nine Teachers, two officers from DEBS office, two sponsors from Sussi and Chuma Lodge and 20 Parents which brought the total number to 300 participants in the research.

DATA COLLECTION INSTRUMENTS

Interview guides and Schedules were used as primary instruments of data collection for collecting data from Pupils, the Head Teacher, Teachers, Debs Officers, Parents and Sponsors, while desktop analysis of papers, reports, articles, books and policy documents formed part of the secondary data collection. Primary data is one which is collected for the first time by the researcher while secondary data is the data already collected or produced by others.

DATA COLLECTION

The specific techniques that were used in the collection of data were in-depth interviews for the Head Teacher, Teachers, Debs Officers, Parents and Sponsors. Schedules were used for collection of data from the pupils. In-depth interviews implicate a qualitative data collection method, they offered the opportunity to capture rich, descriptive data about people's behaviours, attitudes and perceptions, and unfolding complex processes. The interviews were

carried out face to face so that a rapport is created with respondents. The interviews were conducted using a discussion guide which facilitated the flushing out of the respondent's views through open ended questioning. Schedules were filled in as respondents were asked questions from the schedules in the order the questions were listed and the replies recorded in the space meant for the same. This method of data collection is very much like the collection of data through questionnaire, with little difference which lies in the fact that schedules are filled in by the enumerators who are specially appointed for the purpose.

DATA ANALYSIS

Data was cleaned, coded, classified and tabulated for easy presentation of findings. Statistical Package for Social Sciences (SPSS) version 16.1 was used for analysis of quantitative data and the findings of the data has been presented pie charts, figures and tables, while Atlas.ti version 7 was used to analyse the qualitative data and the findings put in narrative form.

RESULTS

The results of the research have been divided into two parts, the first part looking at quantitative analysis and the second part looking at qualitative analysis.

QUANTITATIVE ANALYSIS

The sample as described in the sampling procedure was divided into five groups; pupils, teachers, head teacher, parents and sponsors as shown Table 1, illustrates the respondents by sex.

Table 1. Pupil Respondents by Sex

Description	Frequency	Percent
Female	151	56.8
Male	115	43.2
Total	266	100.0

The analysis of the respondents by sex shows that 151 female and 115 male pupils took part in the research as targeted.

The analysis further showed that the highest number of pupil respondents were Grade 9s' at 21%, with the lowest being Grade 1s' at 2%.

Enrollment

In analysing the first specific objective which was to determine the levels of pupils' enrolment at the community school, the parents, teachers and the head teacher were asked to give their views on the levels of enrolment before and after the SFP. The data from the teachers, head teacher and sponsors indicated that there was an increase in enrolment at the community school as a result of the SFP. Apart from the views from the parents, teachers and the head teacher, enrolment register for the school was also reviewed to assess enrolment before and after the SFP, and the register showed that the enrolment levels had increased almost two fold after the introduction of the school feeding programme. The enrollment in 2011 was at 280 pupils which increased to 692 pupils in 2015.

Table 2. Reasons for Enrolment of Pupils at Nakatindi Community School

Reason for Enrolment	Frequency	Percent
Yes (SFP)	12	60.0
Not (SFP)	5	25.0
Nearest School	2	10.0
Free Education	1	5.0
Total	20	100.0

All the parents that were interviewed acknowledged knowing the existence of the school feeding programme at Nakatindi Community School. The data in Table 2, illustrates that from the parents of the pupils at Nakatindi Community School from the question on reasons why they enrolled their children at Nakatindi Community School. Analysis of the data collected from the parents showed that 60% believed that the school feeding programme influenced their decision to enroll their children at Nakatindi Community School, while 25% of the parents had not been influenced by the SFP to enroll their children at Nakatindi Community School. The analysis showed that 10% of the parents enrolled their children at Nakatindi Community School because of the school's proximity to their homes and 5% that it was because of the free education offered at Nakatindi Community School. This result of the data analysis shows that the school feeding programme was the main reason why parents enrolled their children at Nakatindi Community School.

When the parents of the pupils at Nakatindi Community School were asked what they thought were the benefits of the SFP, the data from the parents that participated in the research indicated that the school feeding programme benefited the pupils through three main ways, food provision (40%), educating poor children (30%) and

increased school attendance (30%), as shown in Figure 1. The data in Figure 1, basically shows how the parents responded to the question on benefits of the SFP expressed in percentage form from highest to lowest response. The result of this analysis shows that most parents believe that food provision is the main reason why the school introduced the SFP at Nakatindi Community School.

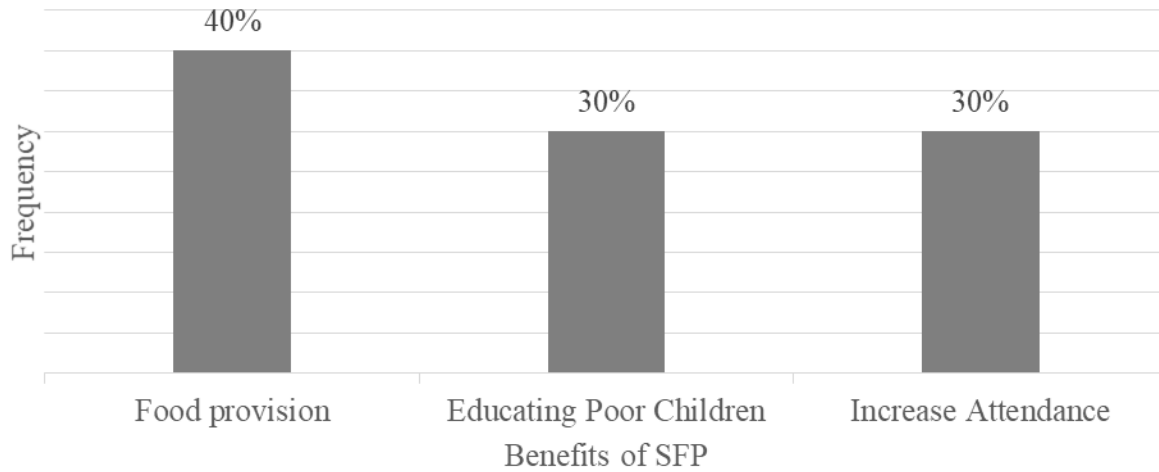


Figure 1. The Benefits of SFP as Perceived by the Parents of the Pupils

Nakatindi Community School enrollment figures from the school registers have shown an increase from 2011 when the school had no school feeding programme. The school feeding programme started in 2013 and the enrollment figures show an increase in enrolment levels as shown in Figure 2.

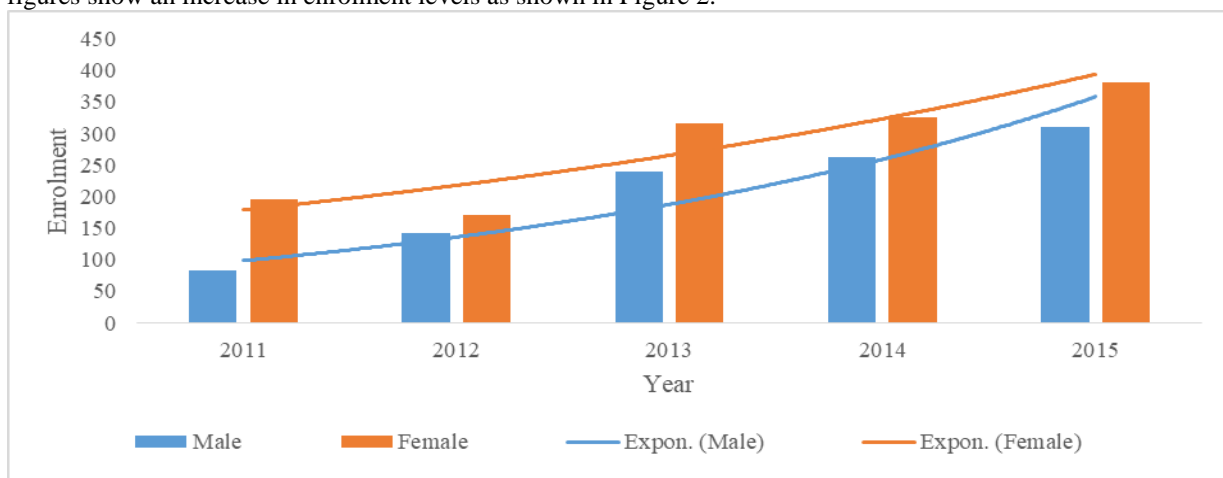


Figure 2. Pupils Enrollment 2011 – 2015 at Nakatindi Community School

Attendance

The second objective of the research was to determine the factors that are responsible for the pupils attending the community school. The results on reasons for pupils attending school are presented in Table 3. 47% of the pupil respondents indicated that they came to learn, 40% indicated that they came because of the meals served at the school, 9% said they wanted to be successful in life, and 3% claimed it was to pass time. This finding shows that pupils' school attendance has confounding factors apart from the SFP. The data shows that wanting to learn is the major reason pupils attend school at Nakatindi Community School.

Table 3 Pupils' Reasons for Attending Nakatindi Community School

Reasons for Attending School	Frequency	Percent (%)
To learn	126	47
Have a Meal	106	40
Pass time	9	3
Succeed in Life	25	9
Total	266	100

Pass Rate

When analysing the pass rate of pupils at Nakatindi Community School, nine (9) teachers were interviewed. The results are presented in Table 4. The results show that 11.1% attributed the pass rate of pupils to the school feeding programme, another 11.1% to the teaching approaches, yet another 11.1% to the reasons that pupils were not assisted by their parents. It is notable that 66.7% of the teachers thought that pupils are not serious with

their school work hence the pass rate of pupils being low at Nakatindi Community School. It should be noted that this is the teachers' perspective on the pass rate.

The head teacher said that the pass rate during the period the school feeding has been in place has been static among grade sevens with a slight increase in grade nines (9) qualifying to grade ten (10).

When the examination results records for grade 7 pupils were reviewed, it was found that the pass rate for the grade 7 pupils had been barely increasing since 2010 (increased by about one percent each year).

Table 4 Factors Affecting Pupils Pass Rate Teachers Perspective

Factors Affecting Pass Rate	Frequency	Percent
Feeding Programme	1	11.1
Teaching Approach	1	11.1
Pupils not serious	6	66.7
Parents not helping children	1	11.1
Total	9	100.0

The pass rate for grade 7 pupils from 2010 to 2017 is presented in Figure 3. It was noted that the pass rate dropped drastically in 2015 to about 54% from 96%. This drop was influenced by different factors related with school management change and availability of adequate teaching materials and teachers.



Figure 3. Pass Rate for Grade 7 pupils at Nakatindi Community School 2010-2017**Mann-Whitney U Test on Pass rate**

Grade seven examination results from 2010 to 2017 were collected to conduct a Mann-Whitney U Test on the pass rate of pupils. To test the hypothesis that the results after

the introduction of the School Feeding Programme ($M=56.50$, $SD=23.742$) had improved compared to the results before the introduction of the School Feeding Programme ($M=41.33$, $SD=5.132$).

Table 5 Mann-Whitney U Test on Grade Seven Pupils Pass Rate

Intervention	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	*p-value
Before SFP	3	3	9	3	-1.08	0.28
After SFP	4	4.75	19			

*Significant at $p < 0.05$

The Mann-Whitney U test, a non-parametric test equivalent to the independent samples t-test was used to test the hypothesis that the results after the introduction of the SFP had improved compared to the results before its introduction. The results of the analysis indicated that there was no statistically significant difference, $z = -1.080$, $P > .05$ in the grade seven results before and after the SFP as shown in Table 5.

QUALITATIVE ANALYSIS

The results of the qualitative data analysis of the interviews with the Head Teacher, Sponsors and District Education Board, was done using Atlas.ti.

The enrollment of pupils at Nakatindi Community School according to the data analysed showed that the enrolment had increased. "The pupils are assured of a meal a day", said Head teacher. The Head teacher said that the SFP has contributed to the increase in the number of pupils that enroll into their school as revealed by the school enrolment register in 2011 when the pupils enrolled was at 280 and in 2015 the enrollment had increased to 692 pupils.

Using Atlas. ti the analysis on the school attendance of pupils at Nakatindi Community School showed that attendance had increased overall with classes usually fully attended by all pupils as stated by the Head teacher. The analysis also showed that the pupils have benefited from the school feeding programme because of their improved health status which was checked in their under-five records and actual individual cases of pupils that have

improved in their nutritional status after the introduction of the SFP.

The pass rate of pupils according to qualitative data obtained from the Head teacher suggested that there was an increase in the pass rate of pupils as could be confirmed by the school annual results before and after the school feeding programme started.

The sponsor's objective of supporting the school feeding programme was to alleviate hunger in school going children at Nakatindi community school, to contribute to the nutritional status of the pupils, to improve the concentration levels of pupils, to increase the school attendance, and to help pupils have access to food at school. According to the data analysis the SFP has not achieved its objectives of improving the concentration levels of pupils, increasing the school attendance resulting in better grades as set by the sponsor.

DISCUSSION OF FINDINGS

Nakatindi Community School started implementing the School Feeding Programme in 2013 with support from the Sussi and Chuma Lodge with the aim of improving the enrolment, attendance and performance of pupils. The main objective of the research was to examine the effect of the school feeding programme on enrollment, attendance and pass rate of pupils.

Pupil Enrollment

According to WFP (2001), a well implemented SFP is an intervention that can prevent short-term hunger and improve school enrolment, attendance and performance of pupils. The SFP at Nakatindi Community School

according to the findings has achieved one of the indicators set out in the main objective. The data collected and analysed shows that the reasons for increased enrolment were related to the implementation of the SFP at Nakatindi Community School. In 2011 the enrollment was at 280 pupils and increased to 692 pupils in 2015. The data analysis showed that 60% of the parents enroll their children at Nakatindi Community School as a result of the SFP. The 60% of parents believed that the school feeding programme influenced their decision to enroll children at Nakatindi Community School. The parents said that the SFP benefited the pupils through provision of food. This supports results from the MoE (Zambia) and the WFP project (2001) which reported that SFP increased child enrollment into school. This assertion is in line with the information from WFP's Food for Education Programme which provided food to 21.7 million children in 74 countries in 2005, which resulted in a 14 percent yearly increase in school enrolment for both boys and girls in 4,175 WFP-assisted schools in 32 Sub-Saharan African countries (Gelli et al, 2007).

School Attendance

When the pupils from Nakatindi Community School were asked for reasons that made them attend school, 47% indicated that they came to learn, while 40% indicated that they came because of the meals served at the school. These findings show that pupils have been encouraged to attend lessons at Nakatindi Community School because of the pupils desire to learn. The pupils want to learn and the meals that are served to them while at school are additional benefits (basic need).

According to Maslow's Hierarchy which is directly related to learning through motivation, in order for students to succeed in the classroom, they must be motivated to attend school. In many community schools, pupils have difficulty in learning because basic needs of Maslow's Hierarchy of Needs are not being met. These pupils are typically pupils of low-socioeconomic status. Pupils of low-socioeconomic status are not learning at the same rate as their peers, they are often mislabeled as "learning disabled". Many times, however, these pupils are simply not having the lower levels of Maslow's Hierarchy of Needs met (Bundy et al, 2009). Nakatindi Community School has defied Maslow's Hierarchy of needs by placing the need to learn first then followed by SFP. Maslow's Hierarchy of needs states that once a basic need is satisfied (food being met by the school through the SFP), individuals should seek higher needs, in this case attending class regularly and concentrating more on school, with the overall aim of getting educated.

Pass Rate of Pupils

The pass rate which is supposed to be the impact of the SFP did not improve significantly at Nakatindi Community School. In 2015 the pass rate dropped from 96% in the previous year to 54% while in 2017 the pass

rate dropped from 97% in the previous year to 45%. This was explained by the administrative difficulties which included availability of teaching materials and teaching staff in 2015 & 2017 and change of the management team. According to McLeod, (2007), when all levels of Maslow's Hierarchy of Needs are met, students are at their full potential for learning. On the contrary this research established that the pass rate of pupils did not improve significantly to relate it to the SFP through which a basic need of food was being met. This then means that the SFP at Nakatindi Community School did not have a significant effect on the pass rate of pupils.

CONCLUSIONS

It is evident that the school feeding programme has influenced the pupils' enrolment, from the pupils' point of view and the parents. This was reflected in the increase of pupil enrollment from 2011 which was at 280 to 692 in 2015 after the SFP was implemented. The research noted that the school feeding programme alone did not influence the enrolment of pupils at Nakatindi Community School in its entirety but that other factors also contributed to the results that the research obtained. Amongst the contributing factors to increased enrolment of pupils can be the increase in the population of the community, the proximity of the school to the community, free education and the SFP its self.

On the other hand from the findings of the research it cannot conclusively stated that the attendance of the pupils had been solely encouraged by the SFP at Nakatindi Community School. The data analysis showed that the SFP was the second reason after wanting to learn that encouraged pupils to attend class more frequently.

The pass rate of pupils was not statistically significantly influenced by the SFP. The pass rate of pupils in grade seven fluctuated which was influenced by the school management challenges and availability of teaching materials and teachers. The SFP had not changed the pass rate of pupils as opposed to other research findings.

It is important to note that according to Bundy et al, (2009) under-nutrition affects the chances that a child will go to school, and stay in school and perform well. Nakatindi Community School and its partner aimed at improving school enrollment, attendance and pass rate of pupils at the school which has not been achieved entirely.

RECOMMENDATIONS

Based on the findings of the study, the suggested recommendations are:

- The research established that enrollment of pupils' increases with implementation of SFP in a school. The research hence recommends that the SFP should be initiated in other community schools that reside in areas with high concentration of families from low socioeconomic status with close monitoring and evaluation mechanisms in place.

- There is need for regulatory framework in the administration of the SFP as this would be essential in defining the applicable standards, both in terms of food and its calorific value and impact evaluation approach.

PROPOSAL FOR FURTHER RESEARCH

The following is the proposed area for further research; A comparative study of enrolment, attendance and pass rate of pupils from a community school with school feeding programme and a community school without school Feeding Programme.

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