

**AN INVESTIGATION INTO THE IMPACT OF SCHOOL FEEDING  
PROGRAMME ON PRIMARY SCHOOL EFFECTIVENESS IN  
GULU DISTRICT**

*BY*

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## DECLARATION

I hereby declare that this work is a result of my own effort and has never been submitted for any award in any other university or institution of higher learning.

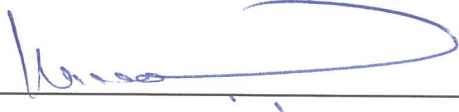
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## APPROVAL

This work has been done under my supervision as a university supervisor, and submitted with my approval.

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## DEDICATION

This research dissertation is dedicated to my parents, family members, friends and classmates with whom I have completed this Masters programme.

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## ACRONYMS

ADF	– Allied Democratic Forces
AIDS	– Acquired Immune Deficiency Syndrome
BEIRD	– Basic Education Integrated into Rural Development
CARD	– Centre for Applied Research in Development
CVI	– Content Validity Index
DEO	– District Education Officer
EFA	– Education For All
FGD	– Focused Group Discussion
GEF	– Global Food for Education
GMEC	– Gulu Municipal Education Committee
G.o.U	– Government of Uganda
HIV	– Human Immune Virus
IDP	– Internally Displaced Person(s)
Kms	– Kilometers
LC	– Local Council
LRA	– Lords Resistance Army
M.o.E.S	– Ministry of Education and Sports
MDG	– Millennium Development Goal
MEO	– Municipal Education Officer
NGO	– Non Governmental Organization
NRM/A	– National Resistance Movement/Army
PLE	– Primary Leaving Examination
PTA	– Parent Teacher Association
PIASCY	– Presidential Initiative on AIDS Strategy and Communication to the Youth
SFP	– School Feeding Programme
SMC	– School Management Committee
SPSS	– Statistical Package for Social Scientists
UK	– United Kingdom

UN	– United Nations
UNEB	– Uganda National Examinations Board
UNESCO	– United Nations Education Scientific and Cultural Organization
UNFPA	– United Nations Fund for Population Activities
UNICEF	– United Nations Children’s Fund
UPDF	– Uganda Peoples’ Defense Forces
UPE	– Universal Primary Education
USDA	– United States Development Agency
US \$	– United States Dollar
Ushs	– Uganda shillings
WB	– World Bank
WFP	– World Food Programme
WHO	– World Health Organization

## ABSTRACT

This research has been an investigation into the impact of the school feeding programme on primary school effectiveness in Gulu district. The study centered around four specific objectives namely, to; Investigate into whether SFP has motivated pupils' enrolment, attendance and performance in primary schools in Gulu district. Investigate into whether SFP has reduced of gender disparity in the primary schools in Gulu district. Investigate whether SFP has influenced parental involvement and stakeholder participation in the management and governance in the primary schools in Gulu district. And, Investigate into whether SFP has contributed to improvement in the teaching-learning process and the general effectiveness of primary schools in Gulu district.

The study is based on three theories of motivation and human needs. The first theory is the hierarchy of human needs theory by Abraham Maslow, the other theories are; Clayton Aderfer's Existence, Relatedness and Growth (ERG) theory and lastly, B. F. Skinner's Reinforcement theory. The study also adopts the theoretical and conceptual frameworks on the review of literature and research investigations are built.

Four instruments have been used in this research namely; questionnaires, interviews, Focused Group Discussions (FGDs) and observations. The main tools were questionnaires which were divided into two sets, one set for head teachers and another for classroom teachers. Thirty two (32) primary schools in Gulu municipality are used as a sample for the purpose of this study with each head teacher answering questionnaires and interviews. Also eight (8) classroom teachers totaling two hundred and fifty four (254) from each of the thirty two primary schools were administered questionnaires. Interviews and Focused Group discussions were conducted with 3 education officials ( DEO, MEO, and Inspector of schools) and with purposely selected Parents Teachers Association (PTA) and School Management Committees (SMC) of the selected schools.

Observation supplemented these methods especially during classroom and some outside activities.

As a result of the investigation, the researcher therefore concludes that, the School Feeding Programme has been instrumental in motivating pupils to enroll, attend and complete primary school. The SFP has also reduced the gender gap between boys and girls enrolling, attending and completing primary school. The study also discovered that parental involvement in schools has improved as manifested by increased effort in encouraging and monitoring their children's school attendance, hence there is improvement in the effectiveness of school services and activities in the primary schools in Gulu district.

Recommendations are thereafter made to the relevant authorities about the situation and education in Northern Uganda. First, to the Government of Uganda to end the two decade conflict which has had devastating consequences on the population and settle them back to their villages. To the Ministry of Education and Sports to revise its education policies for Gulu district by recruiting qualified education personnel for the region to bring about reform in the education sector. This recommendation is also supports the Government's rehabilitation process for northern Uganda. To the World Food Programme, to review the sustainability and exit strategy for SFP. To the Education officers (DEO, MEO and Inspector of schools) and Head teachers and teachers to follow education policies, guidelines and procedures in order to meet the educational standards for learning. To the Parents, other stakeholders and the entire community, to encourage and support children to attend and complete primary school by providing their children with basic necessities for learning.

The School Feeding Programme has thus brought about positive changes in meeting educational goals and objectives in Gulu district. This should not be underestimated.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Conflict and violence have plagued much of Uganda since independence, from Idi Amin's military coup in 1971 to the 14 insurgencies till Yoweri Museveni's National Resistance Army/Movement (NRA/M) took power in 1986. While other rebellions ended, in 1987, Joseph Kony started what later become known as the Lord's Resistance Army (LRA) which has been committing atrocities in the districts of Gulu, and Kitgum. The rebellion later extended to the west Nile districts (Adjumani and Moyo), Lango districts of Lira, Apac, Oyam, Amolatar, and the eastern Teso districts of Kaberamaido, Katakwi, Kumi to Soroti districts. The most prolonged of these conflicts therefore has been the ongoing war in northern Uganda, which has lasted for over two decades.

The two decades of war, rebellion, conflict and political instability in northern Uganda has resulted into several effects and consequences on the populace in this region and greatly affected the provision of basic social services. The most remarkable of such consequences is the internal displacement of over 2 million people confined in Internally Displaced People's (IDP) camps. While the conflict is generally seen as the cause of displacement, the Internally Displaced Persons (IDPs) don't see the Lord's Resistance Army (LRA) attacks per se as the direct cause of their flight. Instead, they perceive it as a deliberate government policy of moving people into 'protected villages', with the aim of protecting civilians more effectively and to assist the Uganda People's Defence Forces (UPDF) military strategy by making rebels more visible. However, a civilian population that has continued to be attacked by rebels even in the 'protected villages' indicates a flaw in the government's protective strategy.

Besides the inadequate protection and insecurity in the Internally Displaced People's (IDP) camps, living conditions there are extremely bad. The poverty level is high, hunger, disease, and malnutrition are prevalent and the locals cannot access to farmlands for cultivation. The United Nations (UN) Global report (2001), acute malnutrition rates prevail for children under the age of five have reached approximately 31% and 18% as found in two Internally Displaced People's (IDP) camps in Gulu.

Similar to the above phenomenon is the dramatic increase in the number of children moving to every evening to spend nights in Gulu town. These children are commonly known as night commuters, which is another form of displacement that highlights a disruption within families and communities. Every night, up to about 25,000 children, walk into Gulu town to find shelter on verandas of buildings in the town centre for fear of Lord's Resistance Army (LRA) attacks and abduction during the night. Years of living under the threat of abduction have meant that children, who have known nothing but war and displacement, are becoming increasingly distanced from their family and cultural roots as thousands of them struggle to live in a harsh broken environment. As a result, lack of parental control over the children has greatly impacted on their discipline and education.

In a Human Rights Watch report: *Abducted and Abused*, (2003), the Lord's Resistance Army (LRA) later established a routine of attacking, looting, burning schools and abducting school children leading to the closure and displacement of schools. As a result, many of the village schools have been 'displaced' to the town area for safety, and original sites have been abandoned leaving school structures hanging and not utilized. Some of the structures have been destroyed by the rebels, there has also been poor supervision of construction work resulting into poor structures and shoddy work. This is because of fear of reaching the villages where chances of meeting the rebels are high. Schools also reduced their hours of instruction and pupils would move to school after 10.00am and

return home by 3.00pm as these are considered as safe hours from rebel activities. Some of the schools have been looted and book supplies burnt, teachers beaten and others killed.

According to the Gulu district Inspector of Schools, 116 out of 234 schools have been displaced to the municipality for safety. In most village schools, instructional materials have been destroyed and the general management of education rendered difficult. As a result, only 56% of primary school age going children are attending school. Those that can afford life and education outside the war ravaged north have migrated to safer regions of the country. This partly explains the large numbers of students and teachers from northern Uganda in some of the best schools around Kampala, Jinja, Mpigi, Wakiso and Mukono districts.

Large numbers of school-age going children have also been abducted by the LRA which has greatly affected the attendance especially in primary schools. The World Development Report, 'Development and the New Generation' by the World Bank (2006), confirms that the LRA abducts boys and girls between the ages of thirteen (13) and eighteen (18). The report further states that two thirds (2/3) of the abducted children are severely beaten, a fifth(1/5) are forced to kill, of which nearly 10% are forced to murder a family member or friend to bind them to the group. Consequently, abductees are more than three times likely to have serious physical injury or illness that impedes their health. Abductees are also twice as likely to report difficulties in family relations and nearly have a year less of education and literacy compared to other children.

The displacement, has also therefore put a huge stress on relationships within the communities and reduced its people to a state of dependency and helplessness. Thus the many negative consequences of displacement have led the people into notions of economic and political disempowerment and marginalization.

Despite the prolonged rebellion and its severe consequences on the population, the numerous complex dynamics that surround and sustain the conflict haven't been well articulated by both the people living amidst the conflict and the outsiders. For the local population, the government initially appears to be politically marginalizing them and portraying the conflict in ethnic terms. This allegation is supported by the fact that conflicts in other parts of Uganda have been resolved before the northern war. For instance, the conflict in Western Uganda with the Allied Democratic Forces (ADF), was put off quickly because of the proximity to Kampala- the capital city. Similarly the West Nile Bank Front (WNBF) in the West Nile districts was resolved in time. Based on such reasons, the people living in northern Uganda feel politically isolated and marginalized from the rest of the country.

The prevalent economic, social and political conditions in northern Uganda reinforce the people's notion of marginalization. Whereas poverty in itself does not automatically lead to violence, and is not a root cause of conflict, it is certainly a consequence of a war not attended to. Perhaps widespread displacement of millions is the most visible impact of the conflict which serves as a daily, physical reminder of the consequences of war on the everyday lives of thousands of civilians. Jan Egeland (2003), then United Nations Under Secretary for Humanitarian Affairs, describes the war in northern Uganda as the biggest forgotten and neglected humanitarian crisis in the world.

What further feeds the people's perception of political and economic marginalization is the failure of past initiatives and attempts by government in ending the conflict. Non-violent attempts have though yielded some positive results and achievements on which future initiatives have been built. The Amnesty Act was for instance seen as the most positive development towards resolution of this conflict. There was a clear feeling that the amnesty is based on values that are seen as compatible with the context in which it is being applied. The implementation of the Amnesty has however been problematic in that

majority of the beneficiaries (rebels) did not know about the initiative. However, there is high prospect that the current peace talks in the Southern Sudan capital state of Juba will lead to an end to the conflict and yield lasting peace in northern Uganda.

## **1.2 Statement of the Problem**

In developing countries especially Africa, the crucial role of education has been undermined by factors like conflicts, poor leadership, lack of setting clear priorities, poverty, ignorance, disease, hunger, and so on. Out of 113 million children of primary school age, 97% of them in developing countries have remained out of school, with Two-thirds (2/3) of these girls. For those who start school, millions drop out before reaching a basic minimum standard of education. (World Bank Report, 2005).

Food is a basic necessity and requirement on which life is sustained, the other basic needs are; water, air, shelter and clothing. Children especially cannot do without such basics if they are to grow up into healthy adults. This shows that feeding especially in schools should constitute an essential service in schools if learning and performance are to be greatly improved. Hunger can therefore detrimentally deter learning among school children for where it is prevalent, it results into stunting, poor physical and cognitive growth, low concentration levels and low problem solving ability. Research by World Food Programme on hunger in Africa has revealed that, at least one hundred and eighty (180) million children in developing countries under the age of ten (10) are undernourished. According to the researcher's derivation of this problem of study, a similar phenomenon is prevalent in Gulu district and northern Uganda in general.

The World Bank (2005) reports that; chronic hunger and malnutrition affects over 400 million children around the world resulting in the death of more people compared to HIV/AIDS, Tuberculosis and Malaria combined. In such a case education doesn't compete well with food as resources devoted to education may

be ineffectively or underutilized due to lack of nutrition leading to low intellectual power of the learners. Hunger has therefore even had more devastating effects on children and their education in the war affected areas such as northern Uganda manifested through delayed growth and cognitive development such as lack of critical thinking, numeracy and literacy skills, high school drop out thus leading to wastage and stagnation in the education system.

The repetition rates are also high and attributed to, the sudden increase in the number of pupils in Primary school due to the introduction of UPE which doesn't correspond to the pupil: teacher ratio. Other reasons are; poor academic background of some teachers, use of inappropriate teaching methods, shortage of instructional materials, inadequate classroom space and irregular inspection and supervision. The Ministry of Education and sports reveals that number of repeaters in UPE schools had increased from 635.021 in 2002 to 1.017.573 in 2005. Repetition rates for boys and girls is at 13.6% and 13.2% respectively. Repetition is therefore leads to wastage of educational resources that otherwise be channeled into useful ventures. The World Bank estimates that repetition costs Uganda 5 billion shillings annually. These repetition rates are believed to be even higher in disturbance areas like northern Uganda.

Synonymous with the repetition, are high drop out rates. The Ministry of Education and Sports planning department (2005) in the Comprehensive Evaluation of Basic Education study reveals that many children drop out of school because of expensive scholastic materials not provided for under Universal Primary Education (UPE) capitation grant. Such materials include; exercise books, pens, uniforms, building fund, lunch, registration and monthly test fee. The problem of drop out is also believed to stem from failure to stick to the stipulated school age. Some parents send under age children to start school in primary one (P.1) classes which inflates enrolment numbers. For unknown reasons when they withdraw these children the figures drop. The appropriate recommended age for entry is 6 years. Uganda's Primary School drop out rate is

reported have escalated from an annual average of 4.7% in 2002 to 6.1% in 2005. In Gulu and other northern Uganda districts, the major factor leading to drop out of school is also partly due to the insecurity and fact that older siblings leave school to look after younger brothers and sisters.

After a decade of existence of UPE (1997 - 2007), the war in northern Uganda still poses a very big challenge to the education sector and the national economy. Education in northern Uganda therefore, has not met its purpose and objectives as Primary Leaving Examination (PLE) results are apparently poor. The figures of PLE results for 2006 reveal that the impact of the twenty year old rebellion will continue to have a lasting effect on education. Analysis of results by Uganda National Examination (UNEB) showed that the majority of poor grades and failures came from the northern districts of Lira, Apac, Kitgum, Gulu, Pader, Dokolo, Amuru, Oyam and the eastern districts of Soroti, Kaberamaido, Katakwi and Amuria districts. The table that follows is thus an analysis of Primary Leaving Examination results for Gulu Municipality between 2002 and 2006.

#### **Gulu Municipal Education Committee: Analysis of PLE 2002 – 2006**

YEAR	DIV I		DIV II		DIV III		DIV IV		DIV U		DIV X		TOTAL
Sex	M	F	M	F	M	F	M	F	M	F	M	F	
2002	206	37	769	546	85	116	42	26	14	21	42	17	1917
%	10.7	1.9	40.0	28.5	4.4	6.1	2.2	1.4	0.7	1.1	2.2	0.9	
2003	256	37	813	519	92	88	28	22	10	14	58	30	1967
%	13.0	1.9	41.3	26.4	4.7	4.5	1.4	1.1	0.5	0.7	2.9	1.5	
2004	182	56	852	561	64	113	64	38	5	11	49	34	2018
%	9.0	2.8	42.2	27.8	3.2	5.6	3.3	1.9	0.3	0.6	2.4	1.7	
2005	80	26	1072	565	195	219	4	71	20	21	52	29	2393
%	3.4	1.1	44.8	23.6	8.2	9.2	1.8	3.0	0.8	0.8	2.2	1.2	
2006	135	37	975	661	100	132	51	35	14	12	37	28	2215
%	6.1	1.7	44.0	29.8	4.5	6.0	2.3	1.6	0.6	0.5	1.7	1.3	

Source: Gulu Municipal Education Office records, 24/7/07.

**Table 1.1**

Education programming in situations of conflict should therefore attract humanitarian concern and the international community should intervene where the government fails to fulfill its duties and obligations of providing equal education opportunities for all its citizens like in northern Uganda district of Gulu

where School Feeding Programme was introduced.

### **1.3 Purpose of the Study**

This study is purported to investigate the effect of School Feeding Programme on school effectiveness in primary schools in Gulu district. The researcher therefore ensures that study meets its objectives and purpose by use of research methods and methodology geared towards the intended motive of the study. The researcher also reports on the findings of the study, the interpretation and discussion in the chapters four and five. At the end of the study, the researcher recommends plausible remedies to education policy implementers at the national and district level, to the head teachers, and all educational stakeholders such as Parents Teachers Association (PTA), School Management Committee (SMC) members about the challenges still facing primary education in Gulu district. Suggestions are also made on areas/topics that still need further research and investigation.

### **1.4 Research Objectives**

The specific objectives of the study are to:

- i. Investigate into whether SFP has motivated pupils' enrolment, attendance and performance in primary schools in Gulu district.
- ii. Investigate into whether SFP has reduced of gender disparity in the primary schools in Gulu district.
- iii. Investigate whether SFP has influenced parental involvement and stakeholder participation in the management and governance in the primary schools in Gulu district.
- iv. Investigate into whether SFP has contributed to improvement in the teaching-learning process and the general effectiveness of primary schools in Gulu district.

## **1.5 Research Questions**

The research study answers the following questions synchronized with the objectives;

- i. Has SFP motivated enrolment, attendance and performance of pupils in the primary schools in Gulu district?
- ii. Has the SFP reduced gender disparity in primary schools in Gulu district?
- iii. Has SFP influenced parental involvement and stakeholder participation in management and school governance in primary schools in Gulu district?
- iv. Has SFP contributed to improvement in the teaching-learning process and general effectiveness in the primary schools in Gulu district?

## **1.6 Hypotheses**

The research investigation into the impact of School Feeding Programme on primary school effectiveness also proves the following hypotheses;

- i. SFP has positively motivated pupils' enrolment, attendance and performance in primary schools in Gulu district.
- ii. SFP has influenced more girls to join primary school hence reducing gender disparity in the primary schools in Gulu district.
- iii. SFP has positively influenced parental involvement and stakeholder participation in management and governance in the primary schools in Gulu district.
- iv. SFP has led to improvement in the teaching-learning process and general school effectiveness in primary schools in Gulu district.

## **1.7 Scope of the Study**

This study has been carried out in Gulu district, and particularly Gulu municipality. Gulu district is located about 640 kms away from the capital city of Uganda, Kampala. The district is divided into four (4) constituencies and counties, namely; Aswa, Nwoya, Kilak and Municipality which is the area of study. The Municipality as one of the counties in Gulu district and area of interest and study in this research is also divided into four (4) divisions, that is, Bar dege,

Pece, Laroo and Layibi.

Gulu municipality therefore has got thirty four (34) primary schools out of about fifty six(56) that are in the entire Gulu district. The thirty four (34) primary schools in Gulu municipality are both government aided and private schools. Thirty two (32) primary schools in Gulu municipality were selected for the purpose of this research.

In the selected schools, all the thirty two (32) primary school head teachers, two hundred and fifty four (254) classroom teachers, and thirty eight (38) PTA and SMC Executive Committee members and three hundred and seventy seven(377) pupils, Education officers namely; DEO, MEO, and Inspector of schools constituted the sample population.

### **1.8 Significance of the Study**

Education brings about significant benefits such as; increased literacy and numeracy skills, improved standards of living, great psychological satisfaction in life, employment benefits and the ability to fight and minimize social evils such as disease, poverty, and ignorance. An education labor force is productive and thus doesn't pose any burden on the economy and minimizes dependency. Investing in education is therefore a worthwhile venture for a country like Uganda given the tremendous results and benefits. (Maicibi, 2005).

The study is therefore significant to: Individuals and scholars who value education, Parents who value education and endeavor to educate their children, Head teachers and Teachers at all levels of education as main educational stakeholders, Education officers (DEO, MEO, Inspector of schools), Non-Governmental organizations (NGOs) and donor agencies that have a stake in education, for instance the WFP in the case of this research, the Ministry of Education and Sports and the Government of Uganda. The recommendations made in chapter five of this research are directed to these categories of

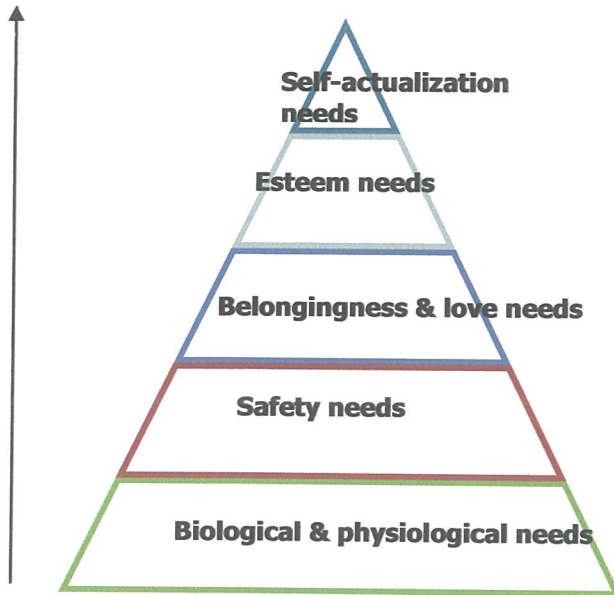
education stakeholders because of their role and obligations they have to meet in the field of education.

### **1.9 Theoretical Framework**

This study adopts three theories on human needs and motivation. These are; Abraham Maslow's hierarchy of needs theory, Clayton P. Adelfer's ERG theory of motivation and B.F. Skinner's Reinforcement theory.

The Hierarchy of Needs theory was put forward by Abraham Maslow 1943 in the publication 'A Theory of Human Motivation', as cited in Luthan & Fred(1992). Abraham Maslow advanced the Hierarchy of Needs theory to explain how needs motivate people. He says, human beings are motivated by various needs which drive them to behave in certain ways. Each need therefore has to be satisfied starting with the first, which deals with the most obvious basic needs for survival itself. Only when the lower order needs of physical and emotional well-being are satisfied then concern for higher order needs of influence and personal development sets in. Conversely, if the things that satisfy our lower order needs are swept away, we are no longer concerned about the maintenance of our higher order needs. The Human needs as proposed by Maslow include; Biological and Physiological needs - air, food, drink, shelter, war sex, sleep, etc, Safety needs - protection from elements, security, order, law, limits, stability, etc, Belongingness and Love needs - work group, family, affection, relationships, etc, Esteem needs - self-esteem, achievement, mastery, independence, status, dominance, prestige, managerial responsibility, etc, Self-Actualization needs - realizing personal potential, self-fulfillment, seeking personal growth and peak experiences. Maslow's hierarchy of human needs are on a pyramidal structure as illustrated below:

**Pyramidal illustration of Maslow's hierarchy of human needs**



**Figure. 1.1:**

**Source: Maicibi N. Alhas(2005), Pertinent Issues in Management: Human Resources and Educational Management.**

From the foregoing structure illustrating the hierarchy of human needs by Abraham Maslow, it can be observed that this theory is not a fully responsive system, it requires some interpretation and thought. While Maslow's theory is regarded as an improvement over previous theories of personality and motivation, it had its detractors. For example, in their extensive review of research that is dependent on Maslow's theory, Wahba and Bridwell (1976) found little evidence for the ranking of needs that Maslow described, or even for the existence of a definite hierarchy at all. Chilean economist and philosopher Manfred Max Neef as cited by Bukist William and Gerbing David (1990) has also argued that fundamental human needs are non-hierarchical, and are ontologically universal and invariant in nature - part of the conditions of being human, for instance poverty, he argues, is the result of any one of these needs being frustrated, denied or unfulfilled.

has also been argued that many of the nutritional and growth problems for children are believed to occur within the first two years of life, there is need to recognize that in a food insecure environment life-cycle interventions should include a range of measures from growth monitoring and promotion, integrated care and nutrition, training for behavioral change, supplementary feeding for young children, school feeding, health-related services, micronutrient supplementation, and food-based strategies. There are however other theories besides Maslow's that were propounded to explain motivation as well.

Other theorists also built on Maslow's effort by deriving other theories on motivation such as; Theory X and Y by McGregor, Motivation Hygiene theory, Re-inforcement theory by Skinner, Equity theory, Expectancy theory by Davie Nadler and Lawler, Achievement theory, Goal setting theory by Locke and lastly, the Existence, Relatedness and Growth (ERG) needs theory by Aderfer. Some of the mentioned theories may not however be relevant to this study which investigates the impact of school feeding on primary school effectiveness as children are motivated by the basic needs of life which do not exceed the third level on Maslow's hierarchy pyramid. (Refer to figure 1.1).

The other theories of motivation that the researcher finds relevant especially in regard to children's needs are; the Existence, Relatedness and Growth needs(ERG) theory and the Reinforcement theory as discussed below;

The ERG theory was developed by Clayton Aderfer, who extends and defines the differences and similarities of his theory to that of Maslow. His Existence needs correspond to Maslow's physiological and security needs. The Relatedness needs which enable humans relate to others are similar to the belonging and esteem needs of Maslow. Lastly, the Growth needs correspond with Maslow's self actualization needs.

The ERG theory can be summarized that a frustrated individual trying to satisfy a higher level need may regress to a preceding level unlike Maslow's theory where

it is assumed that an individual will remain at that level until his/her needs there are satisfied.

The last theory, that is, Reinforcement theory suggests that a given behavior is a function of the consequence of earlier behavior. It is thus argued that all behavior is determined to some extent by the reward or punishment obtained from previous behavior, which in turn has an effect of reinforcing current actions.(B.F.Skinner, 1974, as cited in Ivancevich et al,1990:125).

### **1.10 Conceptual Framework**

This study is on the nature of school feeding programme and its effect on school effectiveness. The variables under study are therefore the School Feeding Programme conceptualized as the Independent variable and School Effectiveness as the dependent variable. The independent variable (School Feeding Programme) in this case is viewed as an emergency intervention by the United Nation's World Food Programme (WFP) organization to reduce hunger and promote learning in schools. School Feeding Programme is also in line with the educational objectives of Education for All (EFA) of achieving Universal Primary Education (UPE) within a time frame of fifteen (15) years, 2000 - 2015. School Feeding Programmes should however, be well placed to embrace broader educational objectives and targets such as those set by the following international commitments of the world community:

Education for All (EFA) Jomtien Declaration of 1990 and the Dakar Framework of April 2000, World Food Summit, 1996 on the reduction of world hunger by one half by 2015, Beijing +5 Conference of 1995 with an aim to focus at least 50% of all education resources on girls and women, World Children's Summit of 1990 with a focus on improvement of education, nutrition and health conditions for all children, Millennium Summit of New York (2000) in which the Millennium Development Goals were derived. Eight goals were set at this summit, of which three are particularly in line with this research. These are; to halve extreme

poverty and hunger by 2015, to achieve Universal Primary Education(UPE), and to empower and promote equality between women and men.

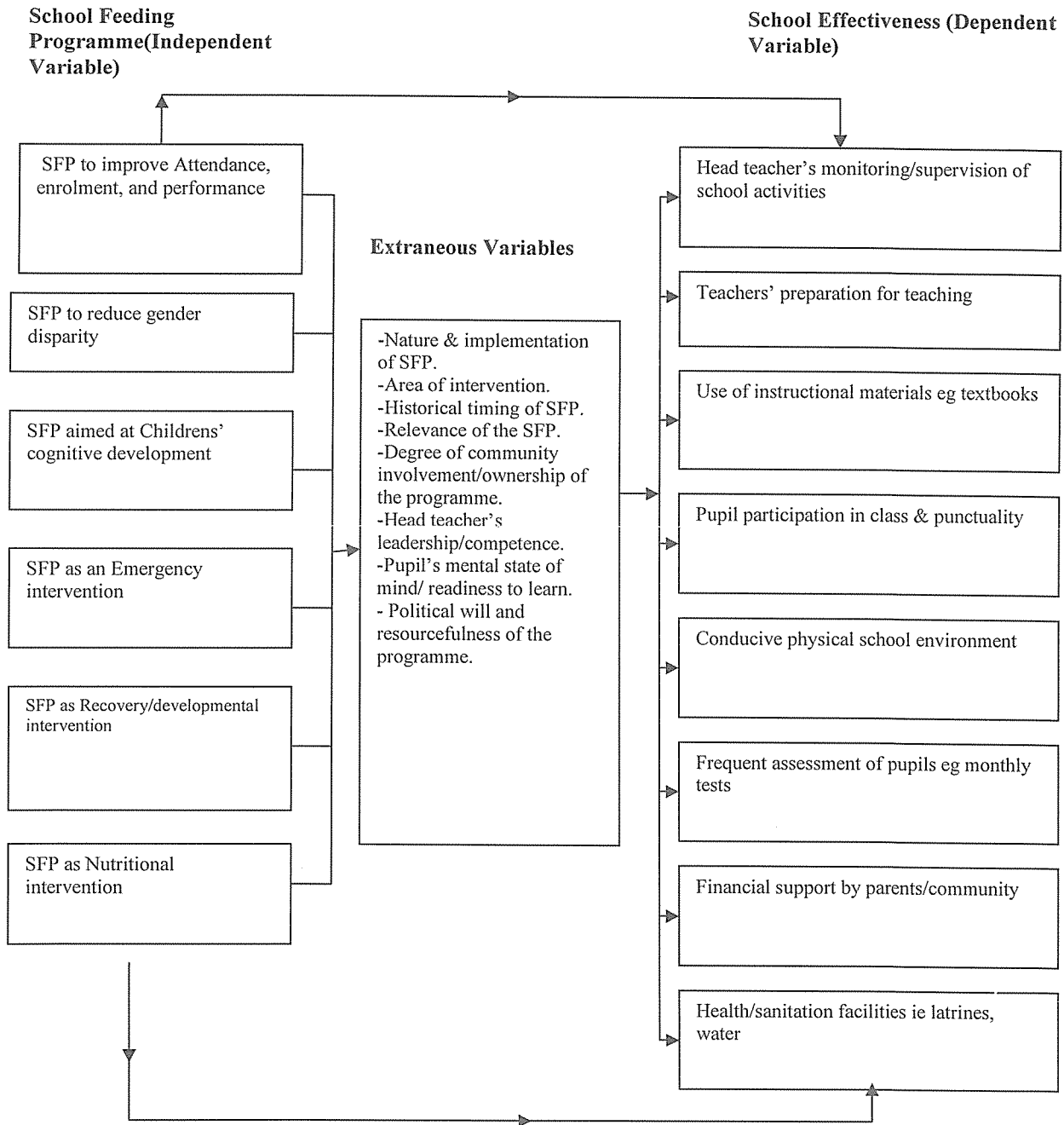
For the case of the School Feeding Programme, it is implemented with a certain set of objectives or dimensions which include; SFPs designed to address enrolment, attendance, performance and gender disparity; SFPs undertaken as part of an emergency intervention to curb hunger and minimize school drop out; some SFPs are primarily undertaken as a nutritional intervention for specific socio-economic groups like in northern Uganda; and finally, SFPs aimed at enhancing the cognitive development of children. However, the value and success of school feeding interventions depends on factors such as their historical timing, their relevance to the extent, type and causes of under-nutrition, the degree of community ownership of the programme, the infrastructure and management capacity for implementation and the political will and resources to ensure sustainability.

Hence, School Feeding Programme implies a set of interventions by the implementing agency (WFP) supporting both medium term nutritional and long term educational objectives that are implemented with food as a primary resource. SFP includes school meals as for the case of schools in Gulu municipality and take-home rations aimed as an incentive to persuade pupils to keep in school.

Generally, SFPs are designed to ensure that educational objectives are realized using food as a motivating resource to promote learning. Through the promotion of learning, there arises a need to improve on the school services and management, hence the dependent variable – school effectiveness. Some of the indicators of an effective school can be summarized as follows; monitoring and supervision of school activities by the Head teacher, set up of the physical school environment, community/parental support in management and governance of the school, and an effective teaching-learning process which emphasizes attendance

and participation in class, use of appropriate medium of instruction and follow up of the pupils through keeping progress records. The two variables in this study, that is, School Feeding Programme (Independent variable) and, school effectiveness(dependent variable) are illustrated on a conceptual diagram that follows. However, besides the two sets of variables, there are other intervening factors known as Extraneous variables which are likely to affect the study. These are also indicated on the conceptual diagram that follows.

## The Relationship between the Independent, Dependent and Extraneous variables



Source: Researcher made

Figure 1.2: Conceptual diagram

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.0 Introduction

This chapter presents the review of related literature on School Feeding Programme (SFP) and school effectiveness. It includes a brief review of the historical origin of school feeding projects, highlights on the principles that underlie many SFPs, and presents evidence that supports and criticizes SFPs.

Bennett John (2003): in the Review of School Feeding Projects School Feeding (Programme) conceives SFP to be a set of interventions by WFP supporting both medium-term nutritional and long-term education objectives being implemented with food as the primary resource. It includes school meals as well as other interventions, such as take-home rations or bursaries for the learners..

Historically, the idea of School Feeding Programmes dates back to the 1930s, when such schemes were introduced in the United Kingdom (UK) and the United States (US) with the explicit aim of improving the growth of children (Richter, Griesel and Rose, 2000). In the UK, a programme that subsidized milk for school children was initiated in 1934 and milk was provided free from 1944 onwards. In the late 1960s and early 1970s this benefit was withdrawn from all, except for those children considered to be particularly needy (a targeting approach in school feeding). School feeding was soon extended to Africa, in particular South Africa, which started a programme to supply free milk to white and colored schools in the early 1940s (Baker et al, 1978). Since then, school feeding has been broadened to include the provision of fortified biscuits, nutrient supplementation or full meals. These meals are either at full or subsidized cost (mostly in the UK and US), or free of charge (more typical of countries in the developing world). It should be however noted that most these meals are of dubious quality and low nutritional value.

The United Nations (UN) under its World Food Programme (WFP) is by far the largest provider of such school feeding projects. Other agents such as UNICEF concentrate primarily on pre-school feeding and in providing complementary inputs (sanitation and health) to existing food aid projects. Increased attention has been given to disseminating knowledge in the area of school nutrition and health through the UN Standing Committee on Nutrition that tracks progress on the World Education Forum commitments of Dakar 2000. This includes all key UN agencies namely; WFP, UNICEF, WHO, UNFPA, World Bank, UNESCO with inputs from academic institutions (for example, the Partnership for Child Development) and several other key NGOs.

According to World Health Organisation(2001), Health and education are two cornerstones of human capital that form the basis of an individual's economic productivity. Traditionally, the two were seen as separate domains, yet, the inextricable link between health and education is being acknowledged, and there is compelling evidence that shows how children's education can benefit from broad health and nutrition interventions (Del Rosso and Marek, 1996). In low-income countries such as Africa, however, poor health in the form of malnutrition and deficiency contribute significantly to poor educational outcomes. Levels of education remain low worldwide as at least 113 million children not attend school. Most of these children come from developing countries, where this problem is particularly severe. In Africa alone, more than 46 million children do not attend school (UNESCO, 2002). To make matters worse, many of them suffer from malnutrition, are stunted, or experience short-term hunger, which seriously affects their ability to learn.

In 2000, the UN member states and agencies met in Dakar to commit themselves to the eradication of hunger and the attainment of UPE. SFPs are one of the main interventions that were derived to address these challenges. School feeding falls squarely within the ambit of the UN declaration, and at least three of the MDGs, namely; to eradicate extreme poverty and hunger, to achieve

universal primary education, to promote gender equality and empower women. The greater focus on educational objectives arising from the UN commitments has seen the number of SFPs, mainly from Africa increase significantly over the past five to 10 years (Bennett, 2003). SFP is thus currently operational across Africa in countries such as, Uganda, Kenya, Tanzania, Burundi, Malawi, Ghana, Zambia and South Africa.

In Uganda, WFP has provided meals in schools in Uganda since 1980. Currently, WFP is offering assistance to 776,000 children in schools in districts affected by conflict, extreme poverty and chronic drought. SFP is particularly big in the drought prone northeastern Karamoja region where only 1% of Primary School children can read, write and count well in English. Rather than taking children to school, many parents in the region prefer to keep the children at home to give a hand in domestic chores, looking for food and income and rearing animals. WFP therefore supports children, as well as cooks and teachers in all 230 Primary schools in Karamoja, as well as some secondary schools.

The Karimojong often keep girls away from school than boys. As an incentive to bring and keep girls in school, WFP intervened and provides take home food rations for girls from P.4 – P.7 who attend at least 80% of their school days each term to minimize the dropping out of girls from school. In 2005, for instance, for every 100 primary school boys there were only 68 girls. There are signs that the take home food ration is making a difference in Karamoja districts of Kotido, Moroto and Nakapiripirit, as in 2006 for the same 100 boys there were 79 girls.

In Northern Uganda (Gulu, Kitgum, Pader, Lira), one of the strategies of the school feeding programme has been to combat food shortages during the crisis of war (food security). In the acute stages of the crisis, for example when schools were not operational, SFPs were not a priority but rather a supplement to the food aid that is provided at household level (WFP, 2003). In northern Uganda's situation, this strategy has proved essential as children have often been

withdrawn from school in order to assist with income generation and the search for food, and in this context SFP has been a major incentive in encourage the enrolment and attendance of school. In areas where schools have been operational, such as Karamoja region, SFP has acted both as an indirect transfer in form of a school meal and a direct transfer in the form of a take-home ration. (WFP Karamoja, 2000).

Hicks (1996), in a study of the impact of SFPs on short- and long-term food security, argues that, with regard to availability, the short-term impact of SFPs on crop yields, diversity of food production and natural resource management are non existent. However, if SFPs are targeted properly, they may have an impact on short-term food security by providing take-home rations as an income transfer to the household. With regard to utilization, short-term food security may be enhanced by improving the protein energy and micronutrient status of children, if the SFP is targeted properly and if the meal that is provided is appropriately fortified and has the necessary energy content. The benefits of long-term food security (with regard to availability, access and utilization) are all linked to improvements in literacy, numeracy and other educational variables.

The SFP is therefore one of WFP's and other educational donors strategy to to transform Uganda's primary schools into a much more attractive settings for learning than they were several years ago. Uganda's primary schools today, are said to have more and better constructed classrooms, textbooks and materials are available to most pupils. Teachers are better trained, more disciplined and better paid. Such improvements have also occurred as part of the country's commitment to UPE which has also contributed significantly to increased enrolments. However, there is a discrepancy between the infrastructure and learning outcomes. National assessments in mathematics, English and science have shown that the results of pupils don't correspond to fore mentioned expectant outcomes. Some of the reasons for this failure to improve learning include the fact that the system has focused on infrastructure without enough

emphasis on improving learning outcomes. For instance a study carried out in Gulu district revealed that there were only a few primary schools with the essential learning facilities and materials like text books. Most of it was infrastructure which was in poor state. The results of the study to track down the allocation of learning materials/facilities in the district carried out between 1999 – 2005 are shown in the table that follows.

**Gulu Municipal Education Committee(GMEC): Tracking study on allocation of resources in conflict districts in northern Uganda in the primary education sub-sector.**

Item	1999	2000	2001	2002	2003	2004	2005
Total number of schools	19	19	28	28	28	29	30
Number of classrooms	239	247	308	334	339	374	387
Number of teachers' houses	16	16	16	20	26	30	34
Number of libraries	-	-	-	-	-	-	-
Number of latrines	-	397	431	492	527	605	659
Number of schools with materials	19	19	21	21	28	28	29
Number of text books							
ENG	1691	1958	2501	3600	3985	5891	6705
MATHS	1950	2220	2565	3721	4699	6035	7825
SCI	1405	1506	1789	2556	3451	4800	5196
Others	2904	3694	5626	11712	11958	12066	13522

Source: Gulu Municipal Education Office records.

**Table 2.1**

NB: Learning centres are displaced schools being hosted by municipal schools. Seven municipal schools are hosting 16 displaced schools, however, the municipal doesn't take responsibility for their upkeep.

The decade since the 1990 Jomtien conference on Education For All has also witnessed vigorous action by governments and development agencies to increase educational enrolments, in particular of girls given that in majority of

developing countries girls have lower school enrolment rates, higher drop out rates and lower achievement than boys. After a decade of mixed success, the goal of expanding educational participation was re-affirmed at Dakar in April 2000 and broadened to embrace issues of quality and achievement. There was concern over girls' underachievement relative to boys especially as this becomes greater as students advance up the educational ladder. There is now considerable research and knowledge about the causes and consequences of girl's lower participation rates in education. Among the constraints to girls' schooling which originate outside the school can be; household poverty, imposition of school fees, distance to school, gendered division of domestic labor and family socio-cultural attitudes(Coclough et al 2000, Brock & Cammish 1998).

In conditions of difficulty such as extreme poverty and war, families generally consider it a low priority to get their children to attend school. In Gulu district for instance, where the LRA rebels have often targeted children for abduction to serve as slaves and child soldiers, the children tend to avoid school and attribute it to be a place of bad luck. SFPs have therefore been found as an incentive that leads to an increase in enrolment, attendance and even retention (Agarwal, Upadhyay, Tripathi :1987;2002). With regard to enrolment, much of the focus of SFPs is specifically on increasing the enrolment of girls, who in times of economic crisis or food emergency are usually the first to be withdrawn from school in order to assist with sibling care and to generate income for the family. The benefits of increasing the enrolment and retention of girls are enormous. It has been shown that girls who go to school are likely to marry later, and have on average 2.9 children, as opposed to 6.5 for uneducated girls (Bennett, 2003). For every year of additional schooling for a girl, there is a resulting 5–10% decrease in mortality among her children (World Health Organization, 2001).

With a decrease in mortality, are also children's well being and growth needs. According to Mendez and Adair(1999), the potential for catch-up growth among school children is thought to be limited after 2 years of age, particularly when

such children remain in poor environments. However, stunting at age 2 years, regardless of whether catch-up is achieved or not, has been shown to be significantly associated with later deficits in cognitive ability, emphasizing the need to prevent early stunting.

Physical growth among school children aged 6 to 9 years, is mainly the result of the interactions between environmental and genetic factors. Where poverty is endemic, most of the factors affecting the physical growth of school children are related to environmental factors experienced before puberty, including poor food consumption patterns, illness, lack of sanitation, and poor health and hygiene practices as prevails in the case of northern Uganda. (Grantham-McGregor, Powell, Walker, Himes, 1991).

Closely linked to the above mentioned factors is particularly the interaction between nutritional deficiency and cognitive performance. While early studies were equivocal about the link between nutritional deficiency and cognitive performance, subsequent evidence has shown that even a short-term lack of food (such as a lack of breakfast) can lead to a reduction in concentration, difficulties with recalling of new information, and verbal fluency (Bennett, 2003). Vaisman, et al (1996) have also illustrated the benefits of a good breakfast on child performance on a variety of cognitive tests and how performance is significantly better shortly after a meal. Temporary hunger has been shown to decrease attentiveness through decreased mental and physical activity. Nutritional supplementation helps with feeding deficiencies, which are also implicated in poor cognitive performance. Improvements in cognitive performance and development (particularly in girls) are linked to the micronutrient supplementation of iodine and iron (Jamison and Leslie, 1990).

Closely linked to nutritional well-being is the assumption that malnutrition and even a short-term lack of food detrimentally affects concentration and the ability to learn. The relationships between the provision of breakfast and cognitive performance and health in children of primary school going-age cannot be

underestimated (Mathews, 2000). The consensus is that breakfast is important to learning, memory and physical well-being in both children and adults. Children who skip breakfast are not as efficient in the selection of critical information for problem solving as their peers who have had breakfast. The ability to recall and use newly acquired information, verbal fluency, and control of attention are principally affected. School breakfast is therefore beneficial to school attendance, learning and academic performance, hence school effectiveness.

School effectiveness is the performance of the school, which can be expressed as its output, and is measured in terms of average achievement of pupils at the end of a period of formal schooling. School effectiveness is therefore seen as the degree to which schools achieve their goals, in comparison with other schools that are equated to, in terms of student intake, through manipulation of certain available conditions by the school or its immediate context. Bennett John (2003): Review of School Feeding Projects.

While SFPs can provide a crucial incentive to get children to enroll in, attend, and continue in school, the mere presence of the student does not guarantee positive educational outcomes. In other words, enrollment, attendance and retention are necessary but insufficient components of improved education. Obviously for SFP schools to meet some level of minimum education standards there must be an emphasis on quality education and education outcomes rather than inputs.

SFPs shouldn't be taken as an end in themselves but should be a means of attaining better educational outcomes. Several factors can therefore be identified that are highly correlated with high rates of student performance. These include: the use of teachers who originally are from the community; the availability of an adequate number of textbooks and/or radios; the availability of acceptable sanitary facilities for students (which is of particular importance for girls); the involvement of parents in the school, taking a variety of forms; and a pupil:

teacher ratio of about 40:1. (UPE Falls Short, Review of UPE in Eastern Uganda).

In relation to the above factors, the school characteristics that can be compared to pupil outcomes included; The head teacher's monitoring and supervision of the teachers' schemes of work, lesson plans, and teaching; The teacher's preparation for teaching and coverage of material in class as indicated using schemes of work, lesson plans, and varied teaching methods; Pupil participation in class through punctuality and regular attendance and through regular class work, particularly practical work, and homework; The use of instructional materials, particularly textbooks, by teachers with pupils; Frequent assessment by teachers of pupil's work in their exercise books, homework, and monthly tests with meaningful feedback and remedial work; Explicit teaching of reading and writing, particularly in the early grades, including the use of library, reading cards, and timetabled lessons; Regular (at least 3x/term) external supervision of the school particularly of the head teacher; Community involvement in terms of: financial and in-kind support, to the school, including basic learning materials, and direct parental support to the school(attendance and lunches). Some characteristics of a school therefore contribute more to pupil learning, but overall, learning outcomes aren't what they could be, as evidenced by PLE results and completion rates.

Whereas SFP in Gulu district has seen an increase in enrolment and school meals have been an incentive for school attendance, it should be borne in mind that some of the difficulties of access to school are, in fact infrastructural. For example how bad roads, inadequate or expensive transport, and the chores that many children have to perform each day before they go to school commonly prevent children from attending school, particularly in rural areas. Girls' school participation in particular has been shown to be affected by the health of siblings, as girls in some cultural and economic settings often are required to care for sick brothers and sisters at the expense of their own education.

Nevertheless, individual characteristics of the learner such as preparation for learning also affects education outcomes. However, the researcher controlled the effect of such extraneous variables by the method of randomization of respondents. (Kampala International University, Manual for Distance Learning Programme, 2006).

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Introduction

The chapter presents the methodology of the study and includes a coverage of the following areas; research design, the area of study and target population, sampling design, data collection methods, research instruments and their validity and reliability, data analysis and research procedure.

#### 3.1 Research design

A cross-sectional survey research design was adopted for this study. The information and data about SFP and School effectiveness was collected through methods such as Questionnaire, Interviews and Focused group discussions, supplemented by Observations. Other secondary information for the research were obtained from sources such as books, magazines, journals, district education records and the internet.

#### 3.2 Study Population

The research has been conducted among the people in Gulu municipality, Gulu district, located 620 kms from Kampala – the capital city. The municipality has a total area of about 16 square miles and a population of about 81,000 persons(2000 National Housing Census).

The study targeted primary schools in the area, which number up to thirty four(34). There are also displaced village schools which have relocated to the municipality for security purposes, which has led to an increase in the number of schools in Gulu municipality. These however don't constitute part of the sample for this study.

### 3.3 Sample and Sampling technique

The table(3.1) that follows shows the parent population and sample size used by the researcher in the study.

**Parent population and Sample size of the study**

<b>Sub-group size</b>	<b>Parent population</b>	<b>Sample size</b>	<b>No. of interviewees</b>
Education officers	3	3	3
Head teachers	34	32	10
Teachers	750	254	20
PTA	9	9	9
SMC	9	9	9
Pupils	21532	377	377
<b>Total</b>	<b>22337</b>	<b>684</b>	<b>398</b>

**Table 3.1**

Source: Chandy N. Mattatical (2006), PhD Research Proposal, Makerere University.

The researcher used a stratified random sample to select the thirty two (32) selected primary schools. The schools to which questionnaires were administered were the selected schools in Gulu municipality. Some of the schools sampled were as far as eight(8) kms from the town centre, almost at the boarder of the area of study and other counties.

Interviews were conducted with education officials who provided relevant information on the education situation in the district, such as DEO, MEO and Inspector of schools. They gave vital information on primary education in the district, for example on performance at PLE, problems faced by education in the area and the impact SFP has created in the primary schools.

A set of Focused Group Discussions was carried out with the PTA and SMC committee members in the thirty two selected primary schools. The nine(9)

executives that make up the SMC and PTA were purposively sampled to provide information on school, governance, management and the role of the community.

### **3.4 Instruments used in Data Collection**

The data/information for this research was obtained through questionnaires, interviews, Focused Group Discussion and observation as discussed below.

#### **3.4.1 Questionnaires**

The questionnaires were issued to each head teacher of the selected schools and eight(8) teachers from each of the schools. Head teachers received questionnaires that focused on enrolment, attendance, performance, school effectiveness and their administrative role in the school, while the teachers received questionnaires on their classroom duties in the school. Both sets of questionnaires therefore centered around school effectiveness and monitoring of school and class activities.

The questionnaires contained structured and open ended questions and the opening section that required the respondent to tick in the boxes provided as it required biodata information such as; age, sex, level of education and name of school. The respondents were therefore given up to seven(7) days to fill the questionnaires which were collected with the help of research assistants.

#### **3.4.2 Interviews**

Among the interviewees were the education officials in the district such as DEO, MEO, and Inspector of Schools. Other interviewees included the PTA chairpersons and SMC chairpersons included the entire executive (9) members in the selected primary schools. A representative of the teachers on SFP, a pupils' representative on the SFP and a storekeeper were among those interviewed.

The interviews and interactions with the PTA, SMC and pupils revealed that most pupils move to school without having taken breakfast at school and some even go back home and sleep hungry after school.

Despite the fact that schools charged a fee of Ushs. 3,000(US \$ 1.5) for buying firewood and pay cooks who prepared meals for the pupils, most pupils continually stayed hungry in school because their parents/guardians cannot afford to pay the required fee. Most schools are however under UPE and there are no costs of education involved except for school requirements, such as, uniform, books, pens/pencils.

Most schools had in place measures emphasizing health education was emphasized. Majority of the schools had messages on HIV/AIDS pinned on the walls of offices, staffrooms and classrooms. In some schools, such messages were also displayed in the compounds, for example, PIASCY, WHY WAIT? Because I am worth waiting for. The former is an HIV/AIDS prevention initiative for boys and girls, whereas the latter is an initiative specifically targeted at keeping girls in school

### **3.4.3 Focused Group Discussions**

The FGDs were conducted with the PTA and SMC committees of the selected primary schools. Each of the committees is made up of nine(9) members, but not all could be accessed at the time of the discussion. The number therefore varied from school to school. The areas of discussion centered around the roles and responsibilities of the PTA and SMC in the running and linking the school to the local community.

These FGDs lasted for about 30 minutes each, as the researcher visited two schools in a day. The date and time for the discussions were arranged for by the head teachers of the schools together with the researcher and the discussants.

#### 3.4.4 Observation

The researcher also used the technique of observation especially during his visits to the selected primary schools. Among the observations the researcher made during the visit to the schools concern children and their eating habits at school and classroom learning, of which some are mentioned in chapter five. An observation guide attached at the end of this thesis was used for this purpose.

### 3.5 Quality Control of Research Instruments

Validity and reliability are two vital components that a research instrument must meet if it is to be acceptable.(Amin; 2005). These two concepts of research are discussed below describing how the researcher obtained the validity and reliability of the instruments used during the course of the study. Validity was established using the Content Validity Index(CVI) and reliability obtained first using Pearson product moment of correlation and split-half reliability as follows:

#### 3.5.1 Validity

According to Amin(2005), validity is the ability to produce findings that are in agreement with theoretical and conceptual values, that is, to produce accurate results and measure what it is supposed to measure. Content Validity, thus refers to the degree to which a test for instance, actually measures or is specifically related the traits for which it is designed. The Content Validity Index(CVI) can therefore be established using the formula below:

$$CVI = \frac{\text{Total number of valid questions relevant}}{\text{Total number of question items}}$$

The content validity of the instruments used in this research was therefore calculated by two research experts using the above formula, and was established as follows;

Content validity index for questionnaires for Head teachers was found to be 0.91. Content validity index for questionnaires for classroom teachers was calculated to be 0.95. Lastly, the content validity index for the interview guide was found out

to be 0.88. Given these calculations, the overall average content validity index of the research instruments is 0.915 acceptable according to Amin(2005), hence the instruments valid.

### **3.5.2 Reliability**

Reliability refers to the dependability of an instrument in measuring what it is supposed to measure. A reliable instrument is thus one which produces the same results whenever it is repeatedly used, as characterized by precision and objectivity.

In computing reliability, the questionnaire is divided into two (2) equal parts in terms of odd numbers and even numbers. The scores obtained in odd items(X) are correlated to the scores obtained in even items(Y).

The Pearson co-efficient correlation formula by product-moment technique was applied to calculate the relationship between SFP and school effectiveness.

The split-half Spearman Brown prophecy method was used to calculate reliability. The reliability of the research instruments was calculated by two experts and the average found to be 0.7 which is acceptable according to Kathurie and Palls(1993), and Amin(2005). This reliability is low, however, a pretest – retest administration of the same set of questionnaire in Pece Madhivani Primary School scored approximately consistent values proving that the questionnaire was reliable.

### **3.6 Research Procedure**

The research was conducted in the primary schools in Gulu municipality in Gulu district. The researcher obtained an introductory letter signed by the Director of the postgraduate school addressed to; The District Education Officer(DEO), The Municipal Education Officer (MEO), The Gulu district Inspector of Schools and The Head teachers of Primary schools in Gulu district.

In Gulu, the researcher visited the office of the DEO, MEO and Inspector of schools and presented the letter of introduction, which was endorsed by the DEO and MEO to go ahead and conduct the research. The endorsing was also to seek the cooperation of the head teachers and was always presented to the authorities in the schools visited.

The researcher then printed out his instrument guides(questionnaires, interview guide, Focused Group Discussion guide and observation) and made arrangements and schedules on how to start collecting data. The questionnaires were pre-tested in five schools before the actual data gathering process. The questionnaires were then disseminated to the selected primary schools and the respondents given a period of up to seven (7) to enable them respond. It took up to twenty one(21) days, that is, three(3) weeks for the researcher to distribute all questionnaires.

After seven(7) days, the questionnaires were collected. However, in course of distributing the questionnaires, the researcher in consultation with the head teachers and interviewees such as PTA, SMC committees and pupils set dates and time and agreed on interview schedules. The dissemination of questionnaires and scheduling of interviews therefore went on concurrently and the dates and time for interviews were recorded in the researcher's diary. The process of picking the answered questionnaires took a period of 4 – 5 weeks.

After the seven days (7) period, the researcher collected the questionnaires from the various schools they had been distributed. The questionnaires were checked for completion and consistency. They were also sorted out and edited to await entry into the computer for analysis.

### **3.7 Data Analysis**

The tools used for data collection in this research are four; questionnaires, interviews, FGDs and observation. After the collection of the data, especially the questionnaires, the researcher had to make a scrutiny and categorization for sorting purposes and to check for the non-responses. The data was then sorted, edited, coded and entered into the computer for statistical analysis. The Statistical Package for Social Scientists(SPSS) programme was used for quantitative analysis of the data and qualitative derivations. Inferential and descriptive statistics were applied during the process of the analysis in form of pie charts, bar graphs, and histograms. Qualitative information was derived from the quantitative data analysis.

After the analysis of the data as described in the above paragraph, a format for data presentation was adopted in form of charts, graphs and tables. Logical conclusions are drawn from the data presented and the data instruments are verified for validity and reliability using Content Validity Index(CVI) and Pearson product moment correlation. Data analysis, presentation and interpretation is therefore in the next chapter(four).

## CHAPTER FOUR

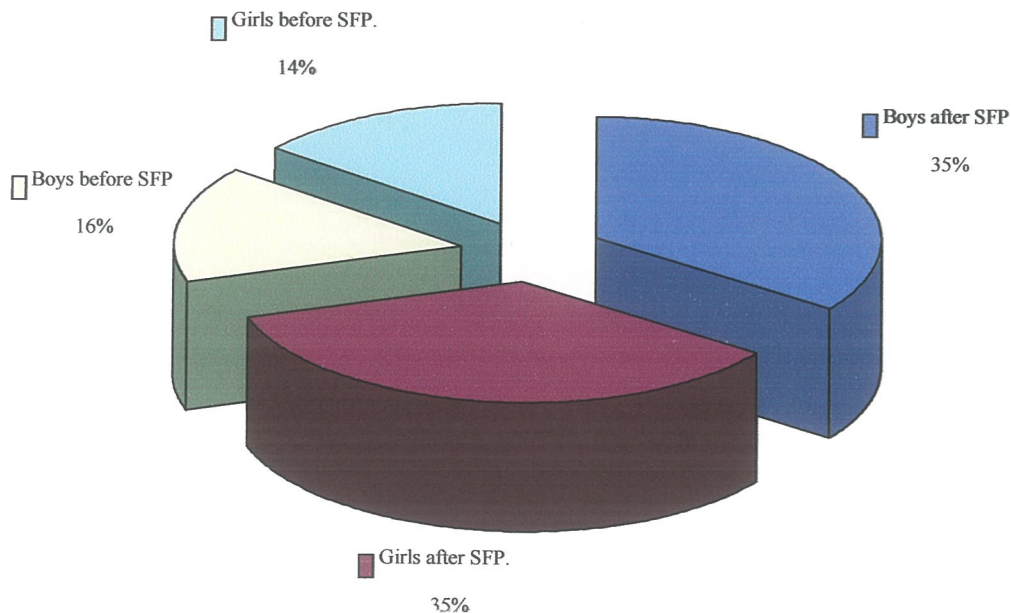
### DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

#### 4.0 Introduction

This chapter presents the findings from the data that was collected using the research instruments, that is, questionnaires which were administered to head teachers and teachers of the selected primary schools in Gulu district. This is displayed through a pie chart followed by a table of percentages of enrolment before and after SFP.

#### 4.1 Enrolment of pupils in primary schools in Gulu Municipality

The enrolment of pupils in the primary schools in Gulu municipality before and after the introduction of school feeding programme is represented by the pie chart that follows. The illustration reveals an increase in enrolment calculated in percentage.



Source: Research data analysis  
Figure 4.1

The table below is a summary of the data on enrolment of pupils represented on the pie chart diagram 4.1.

**Table of enrolment of pupils before and after introduction of SFP**

Before introduction of SFP			After introduction of SFP	
Gender	No. of enrolment	Percentage	No. of enrolment	Percentage
Boys	11,124	16%	14,135	35%
Girls	11,194	14%	14,172	35%

Source: Field research findings

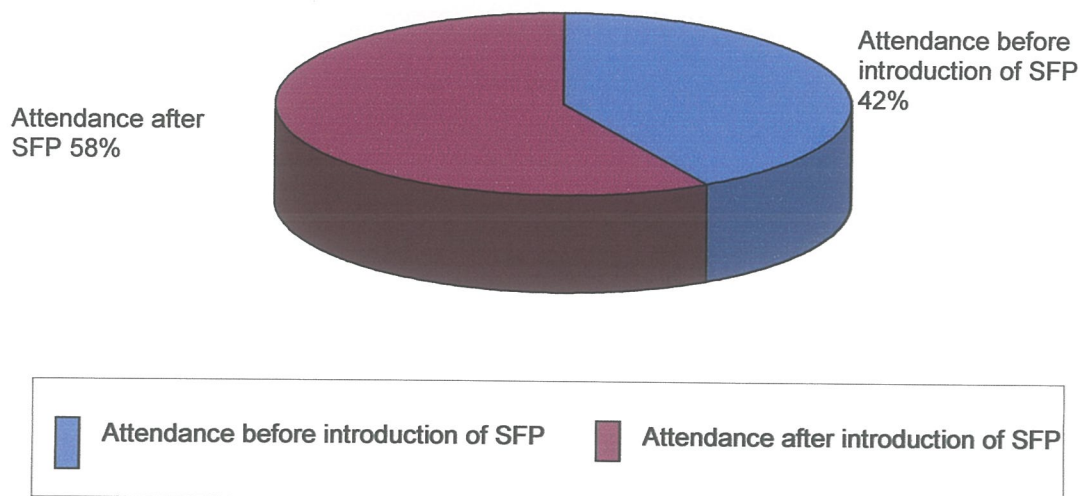
**Table 4.1**

According to the researcher's interpretation of the data in figure 4.3 and table 4.1, there was an increase in the enrolment of both boys and girls. Boys' enrolment increased by 19% from 16% before the introduction of School Feeding Programme to 35% after the introduction of the School Feeding Programme. The enrolment of girls increased by 21% from 14% before the introduction of School Feeding Programme to 35% after the introduction of the SFP in the primary schools in Gulu district. A remarkable observation is the reduction of gender disparity revealed by the increase in girls' enrolment.

The increase in enrolment of pupils of both sexes is an indication that School Feeding Programme has motivated pupils to enroll in school. However, attendance and performance did not match with the enrolment. The attendance figures are higher than enrolment, whereas, they did not as well match the completion rate at PLE, though marked with a slight improvement in performance.

#### 4.2 Attendance of pupils in primary schools in Gulu Municipality

The findings on the attendance of pupils is illustrated by the following pie-chart and the table to follow thereafter.



Source: Research data analysis.

Figure 4.2: Attendance of pupils before and after the introduction of SFP.

The table below is a summary of the data as represented on the pie chart diagram on attendance, figure 4.2.

Table of attendance of pupils before and after introduction of SFP








Before introduction of SFP		After introduction of SFP	
No. of enrolment	Percentage	No. of enrolment	Percentage
19,161	42%	25,485	58%

Source: Field Research Findings

Table 4.2

The percentage of pupils attending schools was observed to have increased after the introduction of the SFP. This increase was by 16%, that is from 58% to 42% as illustrated in figure 4.2 and the table on attendance.

## Legend

 = Division I	 = Division II	 = Division III	 = Division IV
 = Division U	 = Division X	 = Failures	

1= year 2005 , 2= year 2006

From the figure 4.3 it was observed that there was an improvement in the performance of the pupils over the period of 2005 -2006 when the SFP has been operational. The number of pupils who passed in divisions I and II increased and the number of those who passed in division III and IV decreased hence an improvement in the overall performance in PLE in Gulu municipality. The table that follows is a summary of the graphical representation of the results for the years 2005 – 2006.

### Summary of PLE performance 2005 – 2006

Division	I	II	III	IV	U	X	Failures	Total
2005	43	921	276	81			20	1341
2006	68	976	178	69			29	1320

Source: Research findings

**Table 4.3**

The school feeding programme has directly impacted on pupils' performance in primary schools in Gulu district. The number of pupils in division I increased from 43 in 2005 to 68 in 2006. The percentage increase was from 3.25% in 2005 to 5.15% in 2006 which is an indication of improved performance, though this improvement needs to be assessed against the overall number of pupils who sat for PLE for the selected years.

## 4.4 Test of Hypotheses

### 4.4.1 Correlations between SFP and School Enrolment and Attendance

The table that follows shows the test of hypothesis, the Correlation between School Feeding Programme(SFP) and Enrolment and Attendance of pupils as seen in the way parents encourage and send their children to school.

		Have school feeding program	Do parents encourage their children to attend school?
Have school feeding program	Pearson Correlation	1.000	-.115
	Sig. (1-tailed)	.	.315
	N	20	20
Do parents encourage their children to attend school?	Pearson Correlation	-.115	1.000
	Sig. (1-tailed)	.315	.
	N	20	20

Source: Data analysis

**Table 4.4:**

The correlation in table 4.4 indicates a direct linear relationship between the SFP and motivation of pupils. This also has management implication in that, children when fed well and rested enough develop their mental ability to listen carefully to the teachers in the class rooms to produce better academic achievement.

The SFP has therefore had a definite influence on the motivation of pupils in attending school in the primary schools in Gulu district. The attendance of the pupils' before the introduction of the SFP as compared to the attendance of pupils after the introduction of SFP in all the schools in the sample has a t- value of 0.026059 at 0.05 significance level (1-tailed). There fore the positive hypothesis is accepted.

With the introduction of school feeding programme, the researcher observes that there was an increase of 19% in boys' enrolment and 21% for girls. This is a demonstration of the positive influence school feeding has had on enrolment of pupils. This implies that with consistence of school feeding programme, school enrolment will continue to rise, hence fulfilling the objective of increasing enrolment and attendance. The improvement in performance is only due to the overwhelming enrolment but doesn't necessarily match with academic achievement.

#### 4.4.2 Correlation between SFP and Gender disparity

The SFP in the primary schools in Gulu district has had a positive impact in reducing gender disparity. The enrolments of pupils of both sexes before the introduction of the SFP as compared to the enrolments of pupils of both sexes after the introduction of SFP in all the schools in the sample has a t- value of 0.0042 at 0.01 significance level (1-tailed).Therefore the positive hypothesis is confirmed.

There is a reduction in gender disparity given the remarkable increase in enrolment of the girl-child from 14% to 35%. This is an indication that the gap between girls and boys enrolling and attending school has reduced.

#### 4.4.3 Correlations between SFP and Parental role (PTA and SMC) in School Management and Governance.

The SFP has positively influenced parental involvement and stakeholder participation in the primary schools in Gulu district. This is shown in the correlation between School Feeding Programme and PTA/SMC policy monitoring and implementation in the table that follows:

		Have school feeding program	Do the SMC and PTA monitor policy implementation?
Have school feeding program	Pearson Correlation	1.000	.688
	Sig. (1-tailed)	.	.000
	N	20	20
Do the SMC and PTA monitor policy implementation?	Pearson Correlation	.688	1.000
	Sig. (1-tailed)	.000	.
	N	20	20

Source: Data analysis

**Table 4.5:**

\*\* Correlation is significant at the 0.01 level (1-tailed).

The table indicates a significantly high, linear and positive correlation between SFP and the stake holders' policy implementation, hence the positive impact of SFP cannot be underestimated. It is therefore implicit that the Policy agents as well as the implementer should ensure that the policy is maintained consistently without interruption as the study verified the hypothesis of the positive effect of SFP, hence the recommendation made to WFP by the researcher in chapter five to review the sustainability and exit strategy of SFP.

#### 4.4.4 Correlation between SFP and School Effectiveness.

The SFP has had a positive impact on primary school effectiveness in the primary schools in Gulu district as indicated by the correlation between School Feeding Programme and the Monitoring/supervision of school activities by head teachers.

		Have school feeding program	Monitor and supervise school activities?
Have school feeding program	Pearson Correlation	1.000	0.685
	Sig. (1-tailed)	.	.001
	N	20	20
Monitor and supervise school activities?	Pearson Correlation	0.685	1.000
	Sig. (1-tailed)	.001	.
	N	20	18

**Table 4.6:**

Source: Data analysis

\*\* Correlation is significant at the 0.01 level (1-tailed)

There is a positive significant relationship ( $r=0.685$ ,  $p=0.01$ ) between the SFP and effectiveness in the schools in Gulu District and so the positive hypothesis is supported. The co-efficient of correlation by Pearson is linear and positive. This shows that SFP has had a direct impact on effectiveness of primary schools as the result is very significant. This also implies that the children perform better in their academic and social achievement because of the positive effect of SFP, hence it is a challenge to the head teachers to even encourage production of food in the school gardens lest there be a vacuum once the World Food

Programme diminishes their activities after the peace in the region is restored in the long run. The Ministry's Basic Education Integrated Into the Rural Development (BEIRD) programme ,hence should also be revitalized in the long run for self reliance developed in our school system

## CHAPTER FIVE

### DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Introduction

This final chapter of the research presents the discussions, conclusions and recommendations of the study. The conclusions are drawn from the findings of the research and plausible remedies recommended thereafter on how to improve SFP and make school learning and performance more effective in primary schools in Gulu district.

#### 5.1 Discussion of Findings

**Enrolment, Attendance and Performance:** The schools in Gulu municipality had an overwhelmingly high enrolment and attendance. This is because of the migratory lifestyle of people moving from the villages to the town area for safety. This migration is also for safety purposes as chances are rare that the rebels will reach the town areas. For similar reasons of security, most schools had to shift to the town areas where they can operate fully without interruptions from rebel activities. The number of primary schools in Gulu municipality greatly increased as a result to over 40 schools between the years 2000 – 2004.

Whereas the enrolment is high, this doesn't necessarily match with attendance and performance. Besides the drop out and repetition rates are high for parents don't stress on the fact that their children have to attend school. This was basically before school feeding programme was introduced as pupils had to help out their parents in the gardens in order to get food. With the introduction of SFP, children are provided meals in school and this has been a great incentive in motivating enrolment, attendance and performance in Gulu municipality.

As regards gender disparity among staff, the male: female headship ratio didn't greatly vary as there were 14 female heads compared to 18 male. In the schools headed by female heads, there were reports of male teachers being disrespectful of the female head. This can attributed to cultural expectations, which are

stereotyped, casting men as leaders and women as followers. Majority of female teachers felt that male teachers were given most decision-making roles and they, left in insubordinate roles, which mirrored their domestic gender relations.

Female teachers were also given the task of supervising the cleaning and arranging entertainment, while male teachers kept to the sports field. A variety of explanations for this from across the sampled schools included criteria like female failure to attend committees, to generalized comments like female teacher laziness, to male feelings of superiority and their inability to envisage or accept female leadership.

In addition, teachers' extra duties were also gendered. Male teachers supervised male student queues at assemblies, female teachers tended to fulfill social tasks, that is, greeting visitors, offering seats etc whereas male teachers took the responsibility for sports, school grounds and sanitation, that is, tasks that provided physical exertion. Male teachers also tended to deal with issues of discipline, especially corporal punishment.

On Parental Involvement and Stakeholder participation in school management and governance: All the 32 selected schools had some form of community committee intended to support the school. All the schools had PTAs as well as SMCs. However, on the whole, community involvement was low and contributions minimal or non-existent in some cases. The level of activity and involvement of PTA/SMC varied whereby in some cases it was vibrant and in others not. The variations in the levels of school management and institutionalization of school procedures and practices contributed significantly to both students' and teachers' experiences.

Another aspect of school management concerned community relations. There was more evidence of supportive community activity in higher performing schools by this research, where in both contexts the PTA and governing/management body(SMC) were reported as active. Even the level of parental/community involvement was clear and contributions were often in form of funds/materials.

Other forms of community involvement included parents handling serious disciplinary cases in schools especially by punishing their children for wrong doing at school.

The Teaching – Learning process and School Effectiveness: The curriculum at primary school level consists of four (4) compulsory subjects namely; Math, English, SST and Science). Math and English impart basic literacy and numeracy skills, religious and moral issues are incorporated in SST, while the science is integrated. The subjects are examined by UNEB for the award of PLE certificate. However in majority of the primary schools in Gulu municipality, some of the subjects were not taught or lacked qualified teachers to handle them, hence a detriment to learning.

As regards discipline, In the low achieving schools, discipline was poor and there were high levels of both teacher and student absenteeism and lack of punctuality. In one of the schools visited, teachers reported at school at 10.00am instead of 8.00am as evidenced by the signing of the teachers' arrival book. This kind of teacher slackness and unprofessional behavior signaled a breakdown in staff discipline.

The poor management and staff discipline in turn had knock-on effects in student populations. The poorer staff discipline in low performing schools was accompanied by poorer general student attendance and punctuality.

One gendered consequence of poor management and discipline in schools was that girls were more often the target of aggressive behavior, while teachers especially female, were also exposed to disrespectful and intimidating behavior from male students.

The insistence on high standards of school uniform was another aspect of student discipline that was led by school management. Majority of school

children had uniforms but there were different practices related to adaptations and additions to student clothing.

## 5.2 Conclusions

As a result of the introduction of SFP, pupils have been motivated to enroll in school, attendance has improved and completion rate at Primary Leaving Exams has also improved. The high completion rate at PLE has also seen an improvement in performance. With the increase in factors such as enrolment, attendance and performance, many schools had to adopt new measures such disciplinary policies, recruiting more teachers, putting up more infrastructures (classrooms/latrines) and cope with the increasing demands of learning. Though not all criteria for effectiveness has been met, there has been improvement. However, the challenge is still big as the M.o.E.S target is to achieve 100% enrolment and attendance for both boys and girls.

As a measure to reduce gender disparity, SFP has particularly seen more girls enrolling and attending school. However, no proper measures have been put in place to handle cases such as early pregnancy and health kits provision such as sanitary pads. These are leading factors in dropping the girl-child out of school. Nevertheless there is a reduction in gender disparity. Suggested improvement measures therefore tend to focus on external interventions, such as, scholarships or fee waivers for girls and policies on the re-admission of pregnant school girls. On the other hand, failure by teachers to recognize the gendered nature of the teaching/learning environment on female and male students has an impact on the process. The presence of female heads appeared to make no much difference in attempting to break the stereo-typical division of duties by gender. The increase in female enrolments is a result of the introduction of SFP and enforcing gender sensitivity in schools. The increased enrolment of girls is praiseworthy but it is important to know which schools they go to and how they perform there. It is also remarkable that in none of the schools was gender seen as a significant problem by teachers. Yet in all schools there was a clear

delineation of duties and responsibilities by gender among both staff and pupils. There is strict segregation of pupils in lines and queues, and very little interaction between female and male pupils.

Parental Involvement and role in form of PTA and SMC: There was little evidence of active participation by parents and communities in most of the schools that featured in the study. The communities in Gulu given their migratory lifestyle makes it difficult for parents to become so involved. There were no examples of efforts by schools to encourage participation of the extended family, especially grandmothers, with whom pupils often lived.

The level of activity by PTA and other bodies, such as, SMC was patchy and their impact on school not particularly obvious. Even active groups appeared to have little influence on the learning environment in terms of improved management, teacher commitment, pupil attendance or achievement.

In a community such as Gulu characterized by poverty and displacement, it is unrealistic to expect high levels of sustained commitment. In many cases children were found to be living on their own for much of the time.

There is also little evidence of strong relations between school and local communities, and even where there is a dynamic PTA there is, little evidence of a major impact on school environment. One example of good practice in relation to school-community relations was found in one of the schools where PTA chair reported frequent visit and supervision of school activities and calling for emergency meetings in case of need. In this school, transparency about expenditure and how to improve teacher performance and learning environment were reported hence winning community cooperation and support.

School Effectiveness: It is worthy noting that there were more inexperienced and or untrained teachers in some schools and teacher turn over was also higher there. It is also therefore evident that strong leadership, well maintained facilities and high expectations of pupils and staff attendance and performance can all make an important contribution to retaining teachers, as can opportunities for

professional development such as in-service training and study for higher degrees.

The physical condition of most schools was surprisingly poor, whereby buildings were poorly maintained, toilets often unsanitary and there was no imaginative use of displays on classroom walls for teaching and learning purposes. There was also acute shortage of furniture and textbooks in majority of schools and worse with schools far from Gulu town and low performing schools. Given the prevailing conditions and inequitable gendered distribution of classroom time and space, the lack of text books is likely to impact more negatively on girls.

There was also some evidence for an optimum size for a school and that has an impact on attendance and achievement. Some schools are much larger but with a lower student-teacher ratio. Teachers' workloads also increase if they have to teach more than one subject especially to large classes. This can have a negative effect on pupil participation.

Although a few of the 32 schools were in good physical condition, schools with good management had better state of physical infrastructure than those with poor management. Low performing schools were characterized by their particularly poor physical infrastructure as well as varying degree of poor management. Care for school grounds, buildings and furniture are all important signals of a disciplined and sustainable learning environment. Head teachers need to appreciate the importance of well maintained physical facilities, such as buildings, classrooms and toilets. Separate, adequate and clean toilet facilities are particularly important for keeping girls in school.

### **5.3 Recommendations:**

The Government of Uganda should end the war in this Northern part of the country: The war in northern Uganda costs the economy billions of dollars in terms of lost production capacity annually. It has also led to wastage and stagnation in the education sector over the past two decades. All possible measures should be taken by the government of Uganda to end the war in the northern part of the country. Peaceful means of conflict resolution should be adopted as violent means have hitherto failed despite previous attempts. An end to the war will therefore bring in changes and reforms to education in this war ravaged region.

The Ministry of Education and Sports should set realistic priorities and targets to meet the rehabilitation process. Northern Uganda should be prioritized as an area that require emergency assistance for example, qualified and professional teachers should be posted to northern Uganda, huge budgetary allocation, construction of more classrooms and infrastructure. The researcher therefore strongly recommends faster implementation of education policies and procedures that suit the situation of northern Uganda. BEIRD programme for basic education integrated into rural development should also include production of food in the school farms as the region has a lot of fertile soil for production of maize ,beans, ground nuts, simsim etc to form a balanced diet for our school children as part of the SFP

Similarly World Food Programme(WFP) should review the sustainability of SFP and the exit strategy until the schools are self sustaining through their own community farming and school garden programmes. Northern Uganda is still an emergency area that requires assistance. Withdrawal of school feeding support would mean more children dropping out of school. There is need for more donor agencies to continue funding the programme due to the tremendous benefits it has yielded. This is also in view of the return of the people to their homes and the rehabilitation process of the war ravaged region.

Head teachers, D.E.O, M.E.O, Inspector of Schools should pay attention to the educational requirements of the district: They should ensure that the schools follow strict policies and guidelines and procedures that meet education standards and requirements. Such include; recruiting qualified and trained head teachers/teachers, maintaining the school and its infrastructure, following up learning and teaching. These are some of the area that define an effective school and need attention.

Parents, other stakeholders and the entire Community should encourage and support children to attend and complete primary school: They should ensure that their children attend and complete primary school which is the minimal/least education level that should be attained by an individual. They should also provide for their children's' school requirements such as uniforms, meals, stationery, textbooks to aid their learning. Parents should be sensitized on how to motivate their children and the resultant improvement in academic performance. The parents also should participate in the reconstruction of school gardens and production of adequate food within the school system

In a nutshell, in the context of the worldwide reality of endemic malnutrition, and stunting, and where under-nutrition accounts for 53% of all deaths among children under five years of age, nutritional interventions are crucial (Hyder, 1998). However, in the context of scarce resources, which characterizes the health and nutrition systems of the developing world, the most cost-effective and efficacious use of these resources assumes particular importance, not only in addressing the nutritional needs of Africa's children, but also in ensuring the right of people to food that is safe and nutritious, and to the means with which they can sustain themselves. Given the political sensitivity of SFPs, it can be assumed that they will form part of the nutritional and educational landscape in the short and medium term. Creative imagination is therefore needed by a broad range of African policy makers to ensure that school feeding does, in fact, meet the

nutritional and educational needs of children in developing countries such as in Africa.

#### **5.4 Suggestions for further research**

This research doesn't investigations into school feeding and school effectiveness. Further knowledge can be generated by launching an investigation on similar topics of study. Below are some of the areas for further research;

- The relationship between educational inputs and outcomes.
- The role of education in offering social protection to children in conflict situations.
- The relationship between head teacher's leadership styles and school effectiveness.
- The effect of poverty on education of households.
- The Revitalization of BEIRD (Basic Education Integrated Into Rural Development) E.g. The Namutamba Project.

## REFERENCES

Amin E. Martin, 2004. Foundations of Statistical Inference for Social Science Research, Makerere University, Kampala.

Amin E. Martin, 2005. Social Science Research: Conception, Methodology & Analysis, Makerere University, Kampala.

Anita Woolfolk, 2001. Educational Psychology, 8th Edition, New York: Allyn and Bacon.

Bennett John., 2003. Review of School Feeding Projects in East Africa, Nairobi – Kenya.

Brock–Utne, B., 2000. Whose Education For All? The Recolonisation of the African Mind. New York: Falmer Press.

Bukist William, Gerbing W. David, 1990. Psychology Boundaries and Frontiers, Chicago: Harper Collins.

Corvera C. Jennilyn, Chandy Ninan Mattatical(Drs)., 2006. Module for Masters in Education Management & Administration(DL 611: 1,2,3) for Kampala International University Institute of Continuing & Distance Studies.

Economic Policy Research Centre(EPRC) 2002, Costing the Millennium Development Goals, (Mimeo)Kampala: Makerere University.

Government of Uganda, 1998. Education Strategic Investment Plan (1998-2003). Kampala: Educational Planning Department.

Human Rights for Human Dignity; 2005. A primer on Economic, Social and Cultural Rights, London: Amnesty International Publications Secretariat.

Kajubi-Ssenteza, W., 1998. The Concept of Universal Primary Education - Historical Profile, Assumptions and Goals, Paper presented at the National Conference on Universal Primary Education.

Kakinda Mbaaga Frank M., 2000, Introduction to Social Science Research, Kampala: Makerere University.

Maicibi N. Alhas.,2005. Pertinent Issues in Management: Human Resource and Educational Management, Makerere University – Kampala.

Ministry of Education and Sports – Planning Department (2005), Comprehensive Evaluation of Basic Education, Kampala.

Ministry of Education and Sports, 1998. Guidelines on Policy, Roles and Responsibilities of Stakeholders in the Implementation of Universal Primary Education, Centre for Applied Research in Development (CARD).

Ministry of Education and Sports, 1998. Universal Primary Education: The Way Forward, National Conference on UPE Programme, Kampala: International Conference Centre.

Ministry of Finance, Planning and Economic Development 2003, Post Conflict Reconstruction case of Northern Uganda; Consultative group meeting, Kampala.

Ministry of Finance, Planning and Economic Development, 2003. Uganda's progress in attaining PEAP targets- in context of the MDGs, Consultative group meeting, Kampala.

Owolabi Jide, 2005. Policy Making and Educational Policy Analysis, Kampala: Makerere University.

Refugee Law Project Working Paper No. 11.,(2004), Behind the violence: causes, consequences and the search for solutions to the war in northern Uganda.

Republic of Uganda, 1992. Government White Paper on the Education Policy Review: Education for National Integration and Development. Kampala: M.o.E.S.

Tomlinson Mark(Dr), 2007, School feeding in east and southern Africa: Improving food sovereignty or photo opportunity? Health Systems Research Unit, Medical Research Council Regional Network for Equity in Health in Southern Africa(EQUINET), Discussion Paper No. 46

Uganda Abducted and Abused; 2003. Renewed Conflict in Northern Uganda, vol.15, no.12(A): Human Rights Watch.

UNESCO, 2000. The Dakar Framework for Action: Meeting our Collective Commitments., Paris: World Education Forum Dakar.

United Nations Agencies in Uganda, 2000. Promise, Performance and Future challenges for attaining the PEAP and MDGs, Kampala.

Waston, C., & James, C., 1997. The Situation Analysis and Assessment of Children: The Education Sector. UNICEF: Harare

World Bank(2005), Development and the New Generation, Washington D.C

World Declaration for Education for All and Framework for Action, 1990., Meeting Basic Learning Needs, New York: UNICEF House.

Russell Betrand, (1984), <http://www.child-development.org/Home.htm>, 20<sup>th</sup> June 2007.

## APPENDICES

### APPENDIX A: KREJCIE & MORGAN (1970): SAMPLE SIZE(S) REQUIRED FOR THE GIVEN POPULATION SIZES(N)

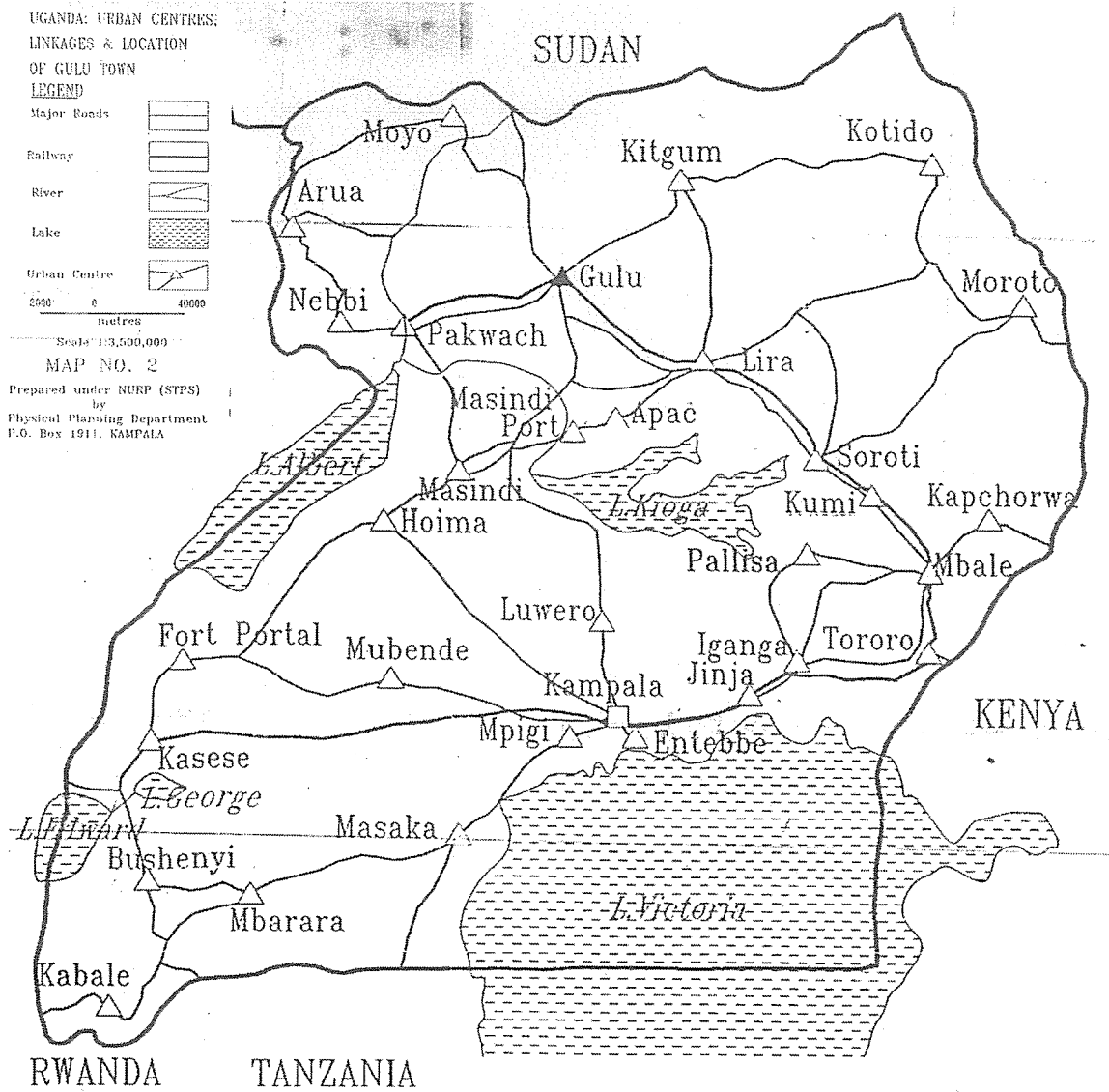
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	256	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Reproduced from Amin (2005:454): R.V. Krejcie and D.W. Morgan (1970), *Determining sample size for research activities, Educational and psychological measurements*, 30,608, Sage publications.

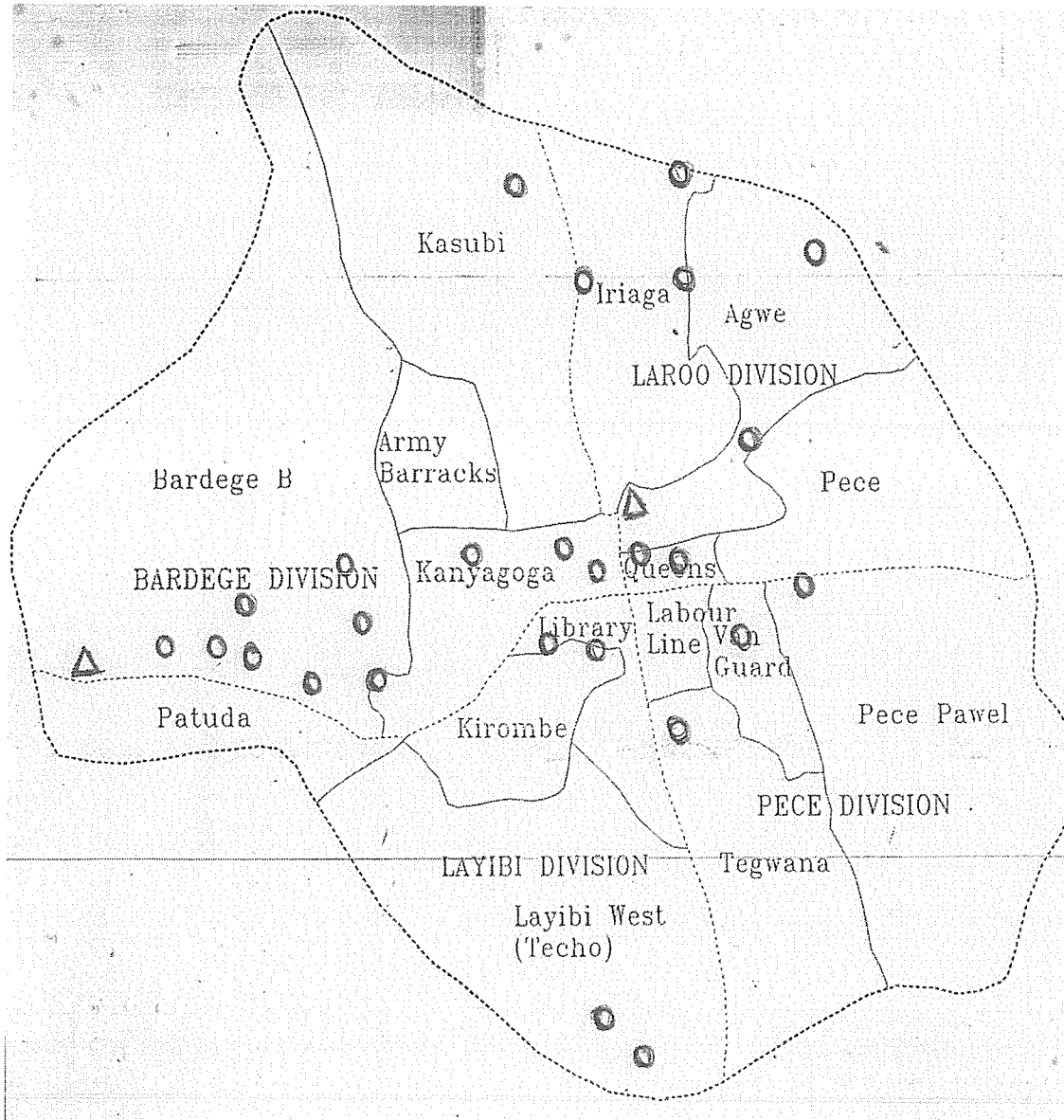
**APPENDIX B: GULU MUNICIPAL EDUCATION COMMITTEE (GMEC): LIST OF PRIMARY SCHOOLS IN GULU MUNICIPALITY**

Atede Primary School
Awich Demonstration Primary School
Aworanga Primary School
Bishop Anjelo Negri Primary School
Bright Valley Primary School
Christ Church Primary School
Grace Christian Academy Nursery and Primary School
Gulu Baptist Primary School
Gulu Primary School
Gulu Prison Primary School
Gulu Public Primary School
Gulu Town Primary School
Highland Primary School
Holy Rosary Primary School
Kasubi Army Primary School
Kasubi Central Primary School
Kirombe Primary School
Laborline Primary School
Laliya Primary School
Laroo Boarding Primary School
Layibi Central Primary School
Layibi Primary School
Layibi Techo Primary School
Mama Cave Primary School
Mary Immaculate Primary School
Mother Angioletta Primary School
Pakwelo Primary School
Pece Madhivani Primary School
Pece Pawel Primary School
Police Primary School
St. Joseph Primary School
St. Kizito Primary School
St. Peters Primary School
UNIFAT Primary School
Unyama Primary School


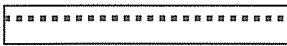



# APPENDIX C: UGANDA; URBAN CENTRES AND LOCATION OF GULU DISTRICT



**APPENDIX D: GULU MUNICIPALITY; ADMINISTRATIVE DIVISIONS AND SPATIAL DISTRIBUTION OF SCHOOL FACILITIES**



**LEGEND**

	Town boundary
	Division boundary
	Parish boundary
	Primary school
	Health facility

## APPENDIX E : RESEARCH INSTRUMENTS

### QUESTIONNAIRES FOR HEAD TEACHERS

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The following questions have been developed by the researcher to get data/information on School Feeding Programme in Primary schools and its impacts on school effectiveness.

You are requested to place a tick where applicable or to fill them in objectively and with accuracy to meet the purpose of the research.

Answered questionnaires will be collected by the researcher in 7 days(1 week) from the day of distribution.

Your cooperation and positive response is highly appreciated.

Thank you.

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Please tick[√] in the box that which applies

1. Name of School : .....
  2. Title of Respondent: Head teacher  Deputy Head teacher
  3. Sex : Male  Female
  4. Age :
  5. Qualification: Dip.Ed  B. Ed.  PGDE
- 

#### Category of School

Please tick[√] all that apply;

6. Foundation Body(if any):  
Catholic   
Protestant/Orthodox   
Muslim   
Other   
Government funded  Private funded   
Day school  Boarding school   
Single sex school : [Boys only]  [Girls only]  [Mixed sex school; both Boys & Girls]
7. Number of Teachers : Male  Female
8. Fees amount:[.....]

9. Amount contributed by parents/guardians: [.....]

10. Do pupils have any meals at school?  Yes  No

Breakfast/Break time {porridge , Lunch {solid meal; Posho+Beans}

Supper {Posho+Beans}

In case of additional meal/diet, state: .....

11. Is the school supported by School Feeding Programme(SFP)?  Yes  No

12. In which year did the School Feeding begin in the school?  
 .....

13. Pupil Enrolment in the school

Fill in the following tables with the number of pupils (boys/girls) enrolled in each class (P.1 to P.7). There are 2 tables; the first table requires enrolment before introduction of School Feeding Programme, and the second table requires numbers after(if the school is supported by School feeding programme).

**Table 1: Before introducing SFP**

Class	Boys	Girls	Class total
P.1			
P.2			
P.3			
P.4			
P.5			
P.6			
P.7			
Grand total			

**Table 2: After introducing SFP**

Class	Boys	Girls	Class total
P.1			
P.2			
P.3			
P.4			
P.5			
P.6			
P.7			
Grand total			

14. Pupil's Attendance

Fill in the tables below with the number of pupils who attend lessons on an average termly basis. The first should be filled with the figures before School was introduced and after, respectively. The boxes are divided into three columns, one for boys, girls and class total respectively.

**Table 1: Before introducing SFP**

Class	Boys	Girls	Class total
P.1			
P.2			
P.3			
P.4			
P.5			
P.6			
P.7			
Grand total			

**Table 2: After introducing SFP**

Class	Boys	Girls	Class total
P.1			
P.2			
P.3			
P.4			
P.5			
P.6			
P.7			
Grand total			

**15. Pupil's performance & Completion at PLE**

*Completion rates;* How many complete P.7? Fill in the tables below with figures and number of grades obtained for the past 2 years – 2005/2006)?

PLE 2005		
Division	No. of Boys	No. of Girls
I		
II		
III		
IV		
Failures		

PLE 2006		
Division	No. of Boys	No. of Girls
I		
II		
III		
IV		
Failures		

**School Effectiveness**

Please tick  in the table below the response that applies.

16. As a Head teacher, do you monitor & supervise teachers and school activities as below;

- i. Check the teachers' schemes of work and lesson plans?
- ii. Observe/supervise teachers while in the classroom teaching?
- iii. Complete supervision forms?
- iv. Conduct regular staff meetings?

- v. Carry out staff performance appraisal?
- vi. Check on teachers' coverage of topics?
- vii. Carry out any practical teaching yourself?
- viii. Ensure classes are well scheduled?
- ix. Ensure classes are in respect with the curriculum?
- x. Ensure teachers use appropriate/varied classroom methods to teach?

17. Physical school environment

- i. How many classrooms does the school have?
- ii. How many are permanent classrooms?
- iii. How many are temporary classrooms?
- iv. Are there enough desks in the school?
- v. How many desks for the entire school?
- vi. How many desks per class, on average?
- vii. How many pupils per desk?

18. Parental support

- xi. Do parents emphasize their children to attend of school?
- xii. Do they provide lunch for their children?
- xiii. Do pupils have the necessary scholastic materials, that is, exercise books, pens, pencils, math sets, uniforms etc?

19. Community role in Management and Governance

- viii. Do the school management and governing committees meet frequently and make constructive resolutions e.g. joint PTA/SMC meetings evidenced by minute records, attendance list and visitors' book?
- ix. Does the SMC and PTA monitor policy implementation?
- x. Does the SMC perform its role of approving school plans and budgets?

20. Community-school relationships

- xi. How is the relationship between the school and community?
- xii. As a head teacher, do you commit yourself the smooth running of the school and the attainment of school goals and objectives?
- xiii. If the answer to the above question is Yes, Please state how?

.....  
 .....

**- END -**

***Thank you for your cooperation and response.***

## QUESTIONNAIRES FOR CLASSROOM TEACHERS

---

*Dear Teachers*

*Please tick in the box that which applies*

1. Name of School: .....
2. Class taught :
3. Sex : Male  Female
4. Age :
5. Qualification: Dip.Ed  B. Ed.  PGDE

### Pupil attendance and participation in class

6. Do they attend classes regularly?
7. Are pupils given class assignments and homework?
8. How often are the pupils' books checked?
9. Are they engaged in any practical class work especially in science, In or outside the classroom?
10. Do pupils receive feedback about their work after it is marked or checked?

### Use of instructional materials

11. Are learning aids displayed in the classroom?
12. Are pupils availed with the textbooks for their use during the learning process?
13. Are pupils allowed to carry textbooks home for their private study?
14. Are progress records of the pupils kept?
15. Given pupils' performance, is any remedial teaching conducted to help slow and weak learners?
16. Are monthly tests given to the pupils?

### Questions on classroom teaching

17. Is the classroom work approach pupil-centered?
18. Do you use instructional materials such as textbooks and classroom displays?
19. Does the community support pupils' positively to be in school?
20. Are both boys and girls given equal attention and opportunity to learn in class?

- END -

*Thank you for your cooperation and response.*

## GUIDE TO FOCUSED GROUP DISCUSSIONS

---

1. Respondent's title:.....
2. How many primary schools are found in Gulu district?  
.....
3. How many schools are found in Gulu municipality?  
.....
4. Gulu district and northern Uganda generally has undergone two decades of conflict, how has this war affected education in the district?  
.....
5. When was SFP introduced in the primary schools in Gulu district?  
.....
6. How do you rate the attendance of these pupils in relation to the number registered/enrolled?  
.....
7. Since its introduction, how has SFP improved the performance of pupils?  
.....
8. In just a few words, please summarize the role SFP has played in promoting primary education in Gulu municipality and district.  
.....
9. Briefly summarize the role SFP has played in promoting learning and effectiveness of the school system in the primary schools in Gulu district/municipality?

*Thank you for your responses*

## INTERVIEW GUIDE FOR PUPILS

---

1. Age :
2. Sex :
3. Class :
4. School :
5. Which village/extension do you come from?
6. Do you eat something before coming to school in the morning?
7. Do you carry something to eat as you come to school everyday?
8. Have you ever missed school this term? If YES, what was the reason?
9. Have you ever repeated a grade in P/S? if YES, what was the reason?
10. Have you ever stopped attending school for one reason or another? If YES, what was the reason?
11. What do you think about schooling?
12. Do you enjoy being at school?
13. What do you like most about your school?
14. Which subjects do you like most and why?
15. What would you like to be in future?
16. Are you given any meals at school? If YES, which meals and how many times a day?
17. How much money do you contribute towards the feeding at school?
18. How far did your parents(mother/father) or guardian go in school?
19. What is his/her occupation?
20. Which domestic chores do you often do at home?
21. Do you find a meal/food to eat at home after school?

*Thank you for your responses*

## OBSERVATION INSTRUMENT/GUIDE

School : \_\_\_\_\_

Time : \_\_\_\_\_

Date : \_\_\_\_\_

Class : \_\_\_\_\_

### Classroom observations

1. Subject : \_\_\_\_\_
2. Topic : \_\_\_\_\_
3. Number of pupils in Class: \_\_\_\_\_  
No. of girls : \_\_\_\_\_  
No. of boys : \_\_\_\_\_
4. When students work in groups, how are the groups determined and why?  
- \_\_\_\_\_
5. Do pupils have the necessary scholastic materials and requirements?  
- \_\_\_\_\_
6. Are boys and girls seated differently? If so, why?  
- \_\_\_\_\_
7. Who sits where and why?  
- \_\_\_\_\_
8. Where is the teacher? Does s/he move around the class?  
- \_\_\_\_\_
9. Space and sitting arrangement by diagram.

### Observations outside the classroom

10. Do pupils come to school in uniform? How are they dressed?
11. Do pupils participate in class? Are they active?
12. How do they socialize during play time?
13. Are extra-curricula activities?
14. School environment? Compound? Buildings? Sanitation(water, toilets)
15. Are meals provided? Which diet? How many times a day?
16. General school appearance?

## APPENDIX F: COMPUTATION OF VALIDITY AND RELIABILITY OF RESEARCH INSTRUMENTS

### I. Computation of Validity

$$\text{CVI} = \frac{\text{Total No. of Valid questions relevant}}{\text{Total No. of questions in the set}}$$

The Content Validity Index for Head teachers' questionnaires:

$$\frac{21}{23} = \underline{\underline{0.91}}$$

The Content Validity Index for classroom teachers' questionnaires:

$$\frac{19}{20} = \underline{\underline{0.95}}$$

The Content Validity Index for interview guide:

$$\frac{8}{9} = \underline{\underline{0.888}}$$

The average CVI is therefore **0.915**

The research instruments are therefore valid as the average Content validity exceeds 0.7.

## II. Computation of Reliability:

### Reliability of questionnaires for Head teachers

Odd items(X)	Score awarded	Even items(Y)	Score awarded
13	YES = 5 No = 3 <u>3.5</u>	12	3
15	3.5	14	5
17	4	16	5
19	5	18	5
21	4	20	4
23	4	22	3
<b>24/6 = 4</b>			<b>25/6 = 4.17</b>

No.	X	Y	$X - \bar{X}$	$Y - \bar{Y}$	X(Y)	$\sum X^2$	$\sum Y^2$
1.	3.5	3	0.5	1.17	10.5	12.25	9
2.	3.5	5	0.5	-0.83	17.5	12.25	25
3.	4	5	0	-0.83	20	16	25
4.	5	5	-1	-0.83	25	25	25
5.	4	4	0	0.17	16	16	16
6.	4	3	0	1.17	12	16	9
<b>Mean</b>	<b><math>\sum X=24/6</math> <b>= 4</b></b>	<b><math>\sum Y=25/6</math> <b>= 4.17</b></b>			<b>101</b>	<b>97.5</b>	<b>109</b>

$$N = 6$$

$$\sum XY = 101$$

$$\sum X = 24$$

$$\sum Y = 25$$

$$\sum X^2 = 97.5$$

$$\sum Y^2 = 109$$

$$(\sum X)^2 = 576$$

$$(\sum Y)^2 = 625$$

### The co-efficient of product moment Pearson correlation

If X and Y are 2 random variables that satisfy the 3 conditions for the Pearson product-moment correlation, then;

$$r_{xy} = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n(\sum X^2) - (\sum X)^2][n(\sum Y^2) - (\sum Y)^2]}}$$

Where; n = the number of subjects or paired observations,

$\sum XY$  = sum of cross products X and Y. That is, multiply the corresponding values X and Y and the sum of these products.

$\sum X$  and  $\sum Y$  are sums of the X and Y scores respectively.

$\sum X^2$  = sum of all squared values of the X scores.

$\sum Y^2$  = sum of all the squared Y scores.

$(\sum X)^2$  = sum of all X scores, this sum squared.

$(\sum Y)^2$  = sum of all Y scores, this sum squared.

Note:  $\sum XY \neq (\sum X)(\sum Y)$ ,  $\sum X^2 \neq (\sum X)^2$  and  $\sum Y^2 \neq (\sum Y)^2$

$r_{xy}$  = Pearson product-moment correlation co-efficient which is the measure of relationship between the independent variable and dependent variable.

The split-half Spearman Brown prophecy method was used to calculate reliability using the formula below;

The split-half reliability formula

$$r'_{xx} = \frac{2 r_{xx}}{1 + r_{xx}}$$

Where;  $r_{xx}$  = correlation between two halves, and

$r_{xx}$  = Split-half reliability co-efficient

$$= \frac{6(101) - (24)(25)}{\sqrt{[6(97.5) - (576)][6(109) - (625)]}}$$

$$= \frac{606 - 600}{\sqrt{[585 - 576][654 - 625]}}$$

$$= \frac{6}{\sqrt{[9][29]}}$$

$$= \frac{6}{\sqrt{[261]}}$$

$$= \underline{\underline{0.37}}$$

Therefore: Pearson product moment correlation index = 0.37

---

Using split-half reliability test:

The split-half reliability formula

$$\begin{aligned}r'_{xx} &= \frac{2 r'_{xx}}{1 + r'_{xx}} \\ &= \frac{2 \times 0.37}{1 + 0.37} \\ &= \frac{0.71}{1.37} \\ &= \underline{\underline{0.54}}\end{aligned}$$

Therefore: the reliability of co-efficient for Head teachers was 0.54.

---

**Reliability for questionnaires for classroom teachers**

Odd items(X)	Score awarded	Even items(Y)	Score awarded
7	5	6	5
9	4	8	4
11	4	10	4
13	3	12	3
15	4	14	5
17	5	16	4
19	3	18	5
<b>Mean</b>			

No.	X	Y	X(Y)	$\sum X^2$	$\sum Y^2$
1.	5	5	25	25	25
2.	4	4	16	16	16
3.	4	4	16	16	16
4.	3	3	9	9	9
5.	5	4	20	25	16
6.	4	5	20	16	25
7.	5	3	15	25	9
<b>Sum</b>	<b>30</b>	<b>28</b>	<b>121</b>	<b>132</b>	<b>116</b>

$$N = 7$$

$$\sum XY = 121$$

$$\sum X = 30$$

$$\sum Y = 28$$

$$\sum X^2 = 132$$

$$\sum Y^2 = 116$$

$$(\sum X)^2 = 900$$

$$(\sum Y)^2 = 784$$

$$= \frac{7(121) - (30)(28)}{\sqrt{[7(132) - (900)][7(116) - (784)]}}$$

$$= \frac{847 - 840}{\sqrt{[924 - 900][812 - 784]}}$$

$$= \frac{7}{\sqrt{[24][28]}}$$

$$= \frac{7}{\sqrt{[672]}}$$

$$= \underline{\underline{0.27}}$$

Therefore: Pearson product moment correlation index = 0.27

---

Using split-half reliability test:

The split-half reliability formula

$$\begin{aligned} r'_{xx} &= \frac{2 r'_{xx}}{1 + r'_{xx}} \\ &= \frac{2 \times 0.27}{1 + 0.27} \\ &= \frac{0.54}{1.27} \\ &= \underline{\underline{0.425}} \end{aligned}$$

Therefore: the reliability of co-efficient for classroom teachers was 0.54.

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**Reliability for interview questions with the District Education Officer,  
Municipal Education Officer and Inspector of Schools.**

Item	X	Y	X <sup>2</sup>	Y <sup>2</sup>	XY
6	1	5	1	25	5
8	2	5	4	25	10
10	3	1	9	1	3
12	1	4	1	16	4
14	5	2	25	4	10
16	5	5	25	25	25
18	5	9	25	81	45
20	1	6	1	36	6
22	1	6	1	36	6
<b>Sum</b>	<b>24</b>	<b>38</b>	<b>92</b>	<b>249</b>	<b>114</b>

Pearson product-moment correlation:

$$\begin{aligned}
 r_{xy} &= \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n(\sum X^2) - (\sum X)^2][n(\sum Y^2) - (\sum Y)^2]}} \\
 &= \frac{9(114) - (24)(38)}{\sqrt{[9(92) - (24)^2][9(249) - (38)^2]}} \\
 &= \frac{1026 - 912}{\sqrt{[828 - 576][2241 - 1444]}} \\
 &= \frac{114}{\sqrt{[252][797]}} \\
 &= \frac{114}{\sqrt{[448.156]}} \\
 &= \underline{\underline{0.254}}
 \end{aligned}$$

$$R_{xx} = \frac{0.508}{1.254} = \underline{\underline{0.405}}$$

Therefore: Pearson product moment correlation index = 0.27

---

Using split-half reliability test:

The split-half reliability formula

$$r'_{xx} = \frac{2 r_{xx}}{1 + r_{xx}}$$

$$\begin{aligned}
& 1 + r'_{xx} \\
= & \frac{2 \times 0.27}{1 + 0.27} \\
= & \frac{0.54}{1.27} \\
= & \underline{\underline{0.425}}
\end{aligned}$$

Therefore: the reliability of co-efficient for classroom teachers was 0.54.

The average reliability co-efficient by calculation was therefore 0.7 which is acceptable (Kathurie and Palls, 1993 and Amin 2005). This reliability is however slightly lower than a pretest – retest score in which the same set of questionnaires were administered in Pece Madhivani Primary School, which was approximately 0.91 proving that the questionnaire is reliable.

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