DATA-V

Reports of Post-project Evaluation

THE NATIONAL IMPLEMENTATION PROGRAM FOR DISTRICT EDUCATION PLANS (NIPDEP)

A Report for the

Post-Project Evaluation

BY

CENTRE FOR EDUCATIONAL RESEARCH AND TRAINING (CERT)

With NIPDEP Technical Team

for

FOR KRI INTERNATIONAL CORP., JAPAN

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ACRONYMS

ANOVA	Analysis of Variance
CDSS	Community Day Secondary School
CERT	Centre for Educational Research and Training
CPEA	Coordinating Primary Education Adviser
CRECCOM	Creative Centre for Community Mobilization
CSS	Conventional Secondary School
DEM	District Education Manager
DEP	District Education Plan
FGI	Focus Group Interview
INSET	In-Service Training
JICA	Japanese International Cooperation Agency
MASAF	Malawi Social Action Fund
MCDE	Malawi College of Distance Education
MIE	Malawi Institute of Education
MIM	Malawi Institute of Management
MoEST	Ministry of Education, Sports and Technology
MSSSP	Malawi School Support System Programme
MTTA	Malawi Teacher Training Activity
NIPDEP	National Implementation Program for District Education Plans
PEA	Primary Education Adviser
PIF	Policy and Investment Framework
PMT	Project Management Team
PTA	Parent-Teacher Association
SACMEQ	Southern Africa Consortium for Monitoring Educational Quality
SEMA	Secondary Education Methods Adviser
SMC	School Management Committee
TDC	Teacher Development Centre
TOT	Training of Trainers

PREFACE

This is the third report comprising the evaluation of project activities of NIDEP pilots. Some of what was included in the first two reports (baseline and mid point) are included here so that it is not necessary to read the previous two in order to understand its content. It is a long report because of the variety of data collection techniques used in the evaluation. Chapter One introduces the evaluation studies and lays down the study flow charts while chapter two outlines the methodological approaches to the studies. Chapter Three examines different quantitative data results collected from school records and through the administration of achievement tests. Chapter Four looks at results acquired through teacher self report questionnaires. Chapter Five examines information collected from field reports and through informal observations of school activities, resulting in the construction of a type of case study. Chapter Six deals with the results of the Focus Group Interviews conducted by raters trained specifically for that purpose. Conclusions and recommendations are provided at the end of each of these chapters.

As will be seen, results of the various analyses are mixed as might be expected when conducting social research of a living educational system. Many people were involved in the conceptualization, design, implementation, evaluation, and reporting of results. Teams were constructed from among two research organizations in Malawi – CERT and MIE – from among staff of MoEST at the central and division levels, educational managers from the district level, and consultants from the JICA team. This ambitious effort was unique for Malawi and as expected many problems needed to be addressed. Thus, this was as much a research project about how to do research as it was a means to evaluate pilot project activities.

The evaluation was funded as part of JICA's funding of the NIPDEP project. Interpretation of results were provided by the evaluation team and do not represent opinions of JICA or MoEST. It is hoped that the contents of this report will be used for future decision making especially decisions related to how to conduct educational research in Malawi.

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EXECUTIVE SUMMARY

A baseline study was undertaken in June of 2003 while a Mid point evaluation study was conducted in March 2004. The Post-project evaluation was conducted during June of 2005. Thus the evaluation of the pilot activities spanned two full school years. The objectives of the evaluation were to:

- Evaluate pilot input, process and outcome indicators at three points in time and determine which interventions seem to cause the greatest positive impact on improving the education system.
- Evaluate pilot outputs to determine if all districts completed their planned pilot outputs and to account for problems in pilot implementation.

The project evaluation methodology was conceptualized as a two-tiered analysis examining results at district level and at school level. The analysis was divided into two separate studies – (1) school and district project analysis and (2) pilot activities output analysis. The team was interested in how interventions acted to improve education systems. Since pilots are implemented at the school level, the team analyzed selected schools based on which mix of pilots were implemented. School level results among different pilot configurations were examined, and conclusions drawn as to which configuration of pilot activities seem to have the greatest, positive impact on results. Also, the team wished to examine results of pilots in terms of their implications for district managers and district policies. Data collection tools were designed specifically for this project. They were used to collect measures pertaining to all indicators related to input, process, output, and outcome. It was necessary to use three different types of tools to collect accurate and relevant data about how the education system performed within each district. Twenty-four primary and 12 secondary schools were selected on the basis of their pilot participation. For primary schools, four schools were to be selected from the 124 schools that fit the six different pilot configurations. As a social inquiry, it was not possible to control the environments using an experimental approach. Thus, it was not possible to control for all variables. Interventions due to other donor activities may create outcomes, confounding the results of this study.

The analysis of the data is divided into four subcategories reflecting the different types of data. While the first three categories of analysis represent a descriptive analysis, the last looks at potential correlations between processes and outcomes.

Quantitative Results Including Achievement Testing: It is possible to discern several points from the results of the quantitative analysis. It is obvious that the training and community mobilization have had positive impacts on the enrolment in schools and on levels of absenteeism as exemplified by reduced absence rates. The provision of desks in both primary and secondary schools has made life in the classroom a little bit better than before. All these point to the fact that small interventions can make a difference to schools. The most severely inadequate resources in the schools are the teachers. Teachers are lacking in Malawi schools both in quantity and quality. The practice of taking away best teachers from primary school and putting them in secondary school has further weakened both primary and secondary sub-sectors. As a result, the quality of both primary and secondary education has been compromised. An appropriate design would have give room for controlling other types or sources of interventions offered to target schools. The overall performance of the pupils in the sampled schools was very low. It is recommended that the impact evaluation for a project such as this one should be conducted after allowing a significant period of time for the effects of the interventions to take root and filter down to the primary target group. Also, it is necessary to examine more closely at procedures and instrumentation for measuring student achievement in Malawi.

Teachers' Survey: The decline in the number of qualified primary teachers and continued high level of unqualified secondary teachers may predict low quality of the teaching learning process.

This would lead to lower student achievement. On a positive note, it appears that teachers have a commitment to education given that the range of tenure for primary teachers averaging across the districts between 8 to 14 years and for secondary teachers between 8 and 20 years. It is recommended that in Malawi where there is a continually high demand for new teachers, emphasis may be better placed on improving the quality of unqualified teachers than investing years to produce qualified teachers with questionable abilities. A strategic approach may be better suited where a balance between supply-side and demand-side in-service is necessary.

Scores for awareness of HIV/AID and gender bias increased dramatically between the baseline and post pilot surveys. This is due possibly to combined pilot awareness and in-service and external factors such as coverage by media. It is unknown if such increased awareness will result in behavior change. It is recommended that design of awareness interventions should include follow-on interventions that focus on changing behavior.

The surveys noted no change in teacher perceptions about involvement of parents and communities in school activities, assistance at home or involvement on school committees. Results were split between those teachers indicating high involvement and those indicating little involvement. This suggests that decentralization activities emanating from the ministry are not being translated consistently across schools. It is recommended that the approach to "external relations" or "community engagement" should become part of the school heads' abilities. Since school heads have evolved from the civil service regulations, it is unlikely they possess some or all the skills necessary for an effective community engagement effort. More effective in-service is needed.

Case Studies and Output Analysis: These results demonstrate the need for basic resources, and the great positive contributions to schools simple interventions can have on the education system. The results from these studies show that the overall levels of provision of resources in Malawi primary schools is very poor and inadequate. While it is the policy of some donors not to be in "the business of providing teachers' houses", the evidence in the JICA projects clearly points to the importance of providing houses in the rural areas and the impact this may have in Malawi's drive towards achieving education for all. The provision of science kits and textbooks in CDSSs exposed the manner in which many students in secondary schools are being denied the opportunity of studying science. It is recommended that no matter the emphasis of future donor activities, the donor activities must include the provision for basic construction and procurement to achieve the minimum standards set in the PIF.

In-service was provided to a wide range of stakeholders including school to district-level education managers, teachers, and SMC members. In addition, several awareness campaigns were conducted. Although some results were provided here, the focus of the analysis was on outputs rather than outcomes. Some anecdotes were provided. It is recommended that a more formalized approach is needed to address the case study approach in order to assess more effectively the quality element of interventions. It is suggested that future research – donor or government – be based on current and acceptable models for school quality improvement research. As for public awareness campaigns, these are necessary components of organizational change. Whereas in-service targets specific groups with training and development, public awareness casts the net much wider to include stakeholders and beneficiaries that will be somehow affected more indirectly by the in-service. In the future, in-service planners should consider including a public awareness component for the catchment area served by those being trained.

Focus Group Interviews: Normally, the research design is decided before project activities begin. In this case NIPDEP's objectives were different; however, a statistically based research design was superimposed. Since the research design was not compatible with the project design, results are highly suspect. It is recommended that if scientifically evaluated results are required

from this or any other projects, research designs should enable the conduct of **holistic evaluation studies**. Holistic evaluation encompasses the complex nature of social sector evaluation utilizing quantitative and qualitative techniques some only recently being applied.

Results suggest problems with instrumentation and data gatherers including focus group raters. Data collection tools require establishing validity and reliability especially if they are to be used to measure constructs such as processes used in this study. Reliability and validity require a specialized expertise. This could be rectified by hiring a short term consultant specializing in testing and measurement to review instruments used for a variety of purposes in the field of education and select those that would be most appropriate for use in Malawi. Selected institutions such as CERT and MIE could receive training on the use, interpretation and reporting of results.

Even with the flaws, results may suggest certain patterns. The concept of providing in-service for teachers and managers, public awareness for community and instructional materials procurement may have the greatest impact on learning. This combination of pilots was not tested. It is recommended that a number of research topics be designed to focus on different input, process and outcome relationships. To test the impact of the systems model, future research may use the approach taken in quality school improvement research and examine different pilots.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

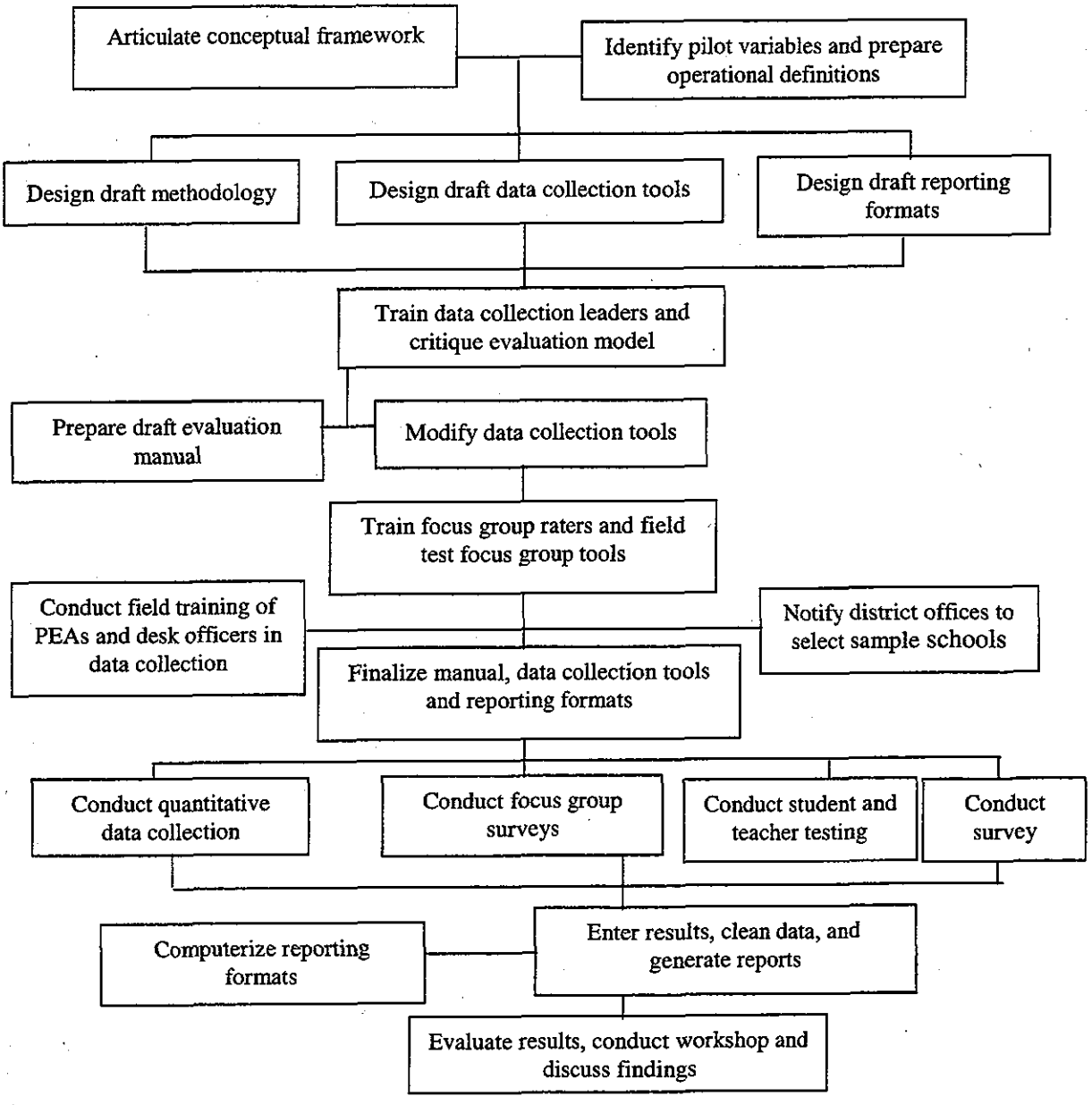
The Malawi Government has in recent times adopted a comprehensive approach to the development of the education sector. To this end, the Ministry of Education, Science and Technology (MoEST) implemented a national school mapping and micro-planning project from mid 2000 to mid 2002, with the assistance of the major development partners. The Japanese International Corporation Agency (JICA) was responsible for the implementation of the micro-planning component of the school mapping and micro-planning project[1]. The implementation of the micro-planning component resulted into the development of District Education Plans (DEP) for all the 33 education districts in the country. The successful implementation of the micro-planning component led to the government of Malawi requesting the government of Japan for assistance for the establishment of a DEP implementation, monitoring and updating system and to create the National District Education Development Plan. Based on the minutes of meeting and the scope of work signed by the MoEST and Japan on 1st October 2002, the National Implementation Program for DEPs (NIPDEP) was set up to be implemented over 32 months from January 2003 to September 2005. The main areas of focus of NIPDEP were construction, capacity building and procurement. It was decided that at three points of the program implementation (baseline, midpoint and post project), evaluation studies be conducted to assess the progress achieved in the districts as they implement their projects. A baseline study was undertaken in June of 2003 while a Mid point evaluation study was conducted in March 2004. This report is the result of the third and final of such studies- the post-project evaluation.

1.2 Purpose Of Evaluation

The purpose of project evaluation is to determine if project interventions have had an impact on educational outcomes. No predetermined system for such evaluation existed within JICA's mandate so one had to be created, tested and then implemented at three junctures of the project – baseline, mid point and post pilot. The purpose of this post pilot evaluation was to bring together an assessment of the impact of the JICA interventions in the six districts. This impact is a measure of outcomes to determine successes and failures of the plan's implementation in relation to the plan's objectives. The results of the evaluations were expected to form the basis for the final report, conclusions and recommendations about how to improve certain aspects of all levels (school to national levels and primary and secondary levels) of Malawi's educational system. The flowchart below shows the steps that were taken to create the evaluation system and implement the three series of the evaluation studies. Two elements of the evaluation – the output analysis was not included in the baseline study. Since outputs are a result of interventions, all output indicators were zero at baseline. Since some of the projects were still being implemented during the mid-point and given the fact that the pilot projects were implemented in two phases, it was decided that it is better to wait for the post pilot evaluation in order to give a complete picture of the outputs from the projects. Further, in order to give an accurate measure of achievement test, it was also decided to administer the tests at the same time as the baseline so achievements tests for the mid point and post pilot were given to the pupils and teachers in June 2004 and June 2005 respectively.

[1] It should be acknowledged that in Malawi, there has evolved a unique setting where various donors have come together in collaboration under the overall co-ordination of the MOESC. This is an encouraging development which by all means should be encouraged and sustained. The donors in question are: **DFID, NORAG, USAID, JICA, CIDA, and DANIDA.**

Study Flowchart



The objectives of the evaluation were to:

(1) Evaluate pilot input, process and outcome indicators at three points in time and determine which interventions seem to cause the greatest positive impact on improving the education system.
(2) Evaluate pilot outputs to determine if all districts completed their planned pilot outputs and to account for problems in pilot implementation.

This midpoint evaluation was intended to provide a midway assessment of the projects in terms of their impact as well as in terms of how the districts were implementing the various projects. This post pilot evaluation provides a more comprehensive analysis of these issues at the end of the project.

CHAPTER TWO: METHODS AND DESIGN

2.1 Introduction

The project evaluation methodology was conceptualized as a two-tiered analysis examining results at district level and at school level. The analysis was divided into two separate studies – (1) school and district project analysis and, (2) pilot activities output analysis. The JICA team, in support of Centre for Educational Research and Training (CERT) – contracted to implement the project evaluation – and the Department of Planning of MoEST, generated a set of variables by reviewing the 39 approved pilot activities across the six districts, and then modifying the list of indicators. Once the team agreed on the final list they prepared a set of operational definitions for inputs, processes, and outcomes. These definitions provided the ability to quantify indicators.

Three separate tasks were completed. The draft guide for conducting the evaluation was prepared; data collection tools were designed; and initial reporting formats were developed. For project analysis, a total of 124 primary and 14 secondary schools were selected from all zones and clusters across the six districts. Quantitative data was collected for each indicator and an average computed to represent a district measure of 138 schools. A subset of schools was selected from among the district level sample to analyze effectiveness of pilot programs. In addition to the quantitative analysis, qualitative measures were constructed using focus group interviews with students, teachers, educational managers and community members for each school within the subset. Another questionnaire was also administered to all teachers (including heads) in 127 primary schools and 29 secondary schools to solicit teachers' views on various aspects of the teaching learning process. Also, achievement tests were administered to students and teachers in standards 4 and 6 and forms 1 and 3. These scores were averaged among schools participating in the same pilots at primary and secondary level and compared to control group schools where no pilot activities were conducted.

A separate evaluation was conducted related to pilot outputs. During the post pilot evaluations, data were collected from pilot monitoring reports and entered on to a table which indicates planned pilot outputs and actual pilot outputs per district. This allowed researchers to compare if each pilot program achieved its plan and then explain variance. Finally, a sustainability analysis was completed in November 2003. The report analyzed each indicator for pilots conducted in that phase as to their continued implementation after funding had ended over one year prior. Details of this analysis appear in Chapter Four of the NIPDEP Final report (August 2005).

It was agreed that quantitative data would be collected from primary and secondary schools using a form that provided spaces for each indicator broken into sub indicators. Qualitative responses were collected on focus group survey forms for each target audience – students, teachers, educational managers and community. Students completed achievement tests on pre-printed sheets controlled and distributed by Malawi Institute of Education. Draft tests were reviewed at the JICA team office and modified as recommended. As shown on the flow chart below, data were collected by five different groups – PEAs/desk officers (school level quantitative surveys and survey questionnaires), rater teams (focus group survey forms), MIE staff (achievement tests), and CERT staff (output data). Responsibilities of each group of stakeholders are outlined on the following table:

Group	Responsibilities
CERT	Overall management, training of raters, compilation of data entry, reporting
MIE	Preparation, administration and reporting on achievement test scores
PEAs/Desk Officers	Collect quantitative data and complete data collection forms
Rater Teams	Conduct focus groups, rate responses, complete forms

The JICA team designed and prepared several reporting formats, including one for reporting district level results, one for each school in the subset study of pilots, one for average score among schools participating in the same pilots, an output report form and a sustainability report form. The forms may be found in the *Guide, Volume 2*.

Once these design tasks were completed, two days of training and critique were scheduled with core trainers, CERT staff, MIE staff and Desk Officers to learn about the survey methodology and instrumentation at the baseline survey. Their critique led to a major modification where, initially, the evaluation was conceived as a district level study. The design was changed to involve a two-tiered study. Also, the meeting led to changes in the wording of operational definitions and questions on focus group forms. Modifications were then made to the *Guide* and instruments. A week later, a second training program was conducted for focus group raters. This two-day program included field testing in local schools of the focus group survey forms. As a result, many additional changes were made. Concurrent with these activities, CERT contacted district offices to begin selection of pilot schools using selection criteria outlined in the sampling section. Final changes were made and copies of all tools, including MIE tests, were duplicated at CERT and distributed to data collection sites. Also concurrently, PEAs met in their respective districts to receive training by core trainers on how to complete survey forms. Desk Officers had been trained at MIM one week previously. Minor modifications were necessary at the mid-point study but there were no changes at the post evaluation except very slightly in the mode of operation.

During the three studies, data collection was intensive, covering a little more than two weeks. Each of the 24 pilot schools required two days for data collection. While PEAs and desk Officers collected quantitative data, four separate focus groups were completed and scored over a two day period. At the same time, achievement tests were administered to appropriate students and teachers during the baseline study. However, during the mid-point and post pilot studies, MIE administered the tests separately. In the balance of schools PEAs and Desk Officers completed school survey forms. The teacher survey was administered at the end of the data collection exercise.

All achievement tests were taken to MIE and scored. Results were summarized on the form found in the *Guide, Volume 2* and then passed to CERT. CERT collected all other forms from appropriate field staff. Data were transferred to master school forms for the appropriate 24 primary and 12 secondary schools. Spreadsheets similar to those found in the *Guide, Volume 2* were computerized with correct formulas to calculate averages and ratios. Data entry was completed and reports generated.

2.2 Level of Analysis

The team was interested in how interventions acted to improve education systems. Since pilots are implemented at the school level, we analyzed selected schools based on which mix of pilots were implemented. School level results among different pilot configurations were examined, and conclusions drawn as to which configuration of pilot activities seem to have the greatest, positive impact on results. Also, the team wished to examine results of pilots in terms of their implications for district managers and district policies. Therefore, this study was designed to collect data that could be aggregated to reflect district-level outcomes. In some cases, data concerning indicators were collected at the school-level and aggregated to reflect district results while in one case, data were collected directly from district managers. Data collection tools are discussed in the following section.

2.3 Instrumentation

Data collection tools were designed specifically for this project (in the *Guide, Volume 2*). They were used to collect measures pertaining to all indicators related to input, process, output, outcome and sustainability shown on the above table. It was necessary to use three different types of tools to collect accurate and relevant data about how the education system performed within each district. The following tools were developed to collect data for this study. With the exception of the achievement tests, these tools may be found in Volume 2 of the Baseline Guide.

Table 2-1 : Data Collection Tools, Purpose, and Reports

Data Collection Tool	Purpose	Report Format
Master Survey Form	PEAs and SEMAs to collect qualitative data from primary and secondary schools. All results from surveys, focus groups and achievement tests – one for each school – compiled on this form	Primary and Secondary School Report Form
District Survey Form	Information from each school master survey form for a district averaged and district score placed on this form	District Evaluation Form
Student Focus Group Survey Form	Qualitative indicators specifically related to students used by raters to convert responses to numerical values (same for primary and secondary)	Transferred to Master and District Survey Forms
Teacher Focus Group Survey Form	Qualitative indicators specifically related to teachers used by raters to convert responses to numerical values (same for primary and secondary)	Transferred to Master and District Survey Forms
Education Manager Survey Form	Qualitative indicators specifically related to educational managers used by raters to convert responses to numerical values (for school and district managers)	Transferred to Master and District Survey Forms
Primary school standards 4 and 6 achievement tests for math and English reading comprehension.	One period-long test based on textbooks and administered to both students and teachers	Transferred to Master and District Survey Forms
Secondary school forms 1 and 3 achievement tests for math and English reading comprehension.	One period-long test based on textbooks and administered to both students and teachers	Transferred to Master and District Survey Forms
Teacher Self Report Survey	Solicit views of teachers on the teaching learning process	Questionnaire analysis
DEM District Annual Report Summary of JICA NIPDEP Pilot Projects	Reports required by the JICA team and was used also, to prepare output analysis	Pilot project Output Report Form

2.4 Sampling

The number of schools selected to participate in the district level study is found on the next table. PEAs were asked to rank order all schools in their zone from lowest to highest performing in their estimation. The bottom and top outliers were chosen as part of the sample. The Cluster Heads were asked to select one Community Day Secondary School (CDSS) and one Conventional Secondary School (CSS) to participate in the sample. The decision was left to them as to which schools to choose.

Table 2-2 :Number of Schools in the Sample for District-Level Analysis

District	Primary Schools	Secondary Schools
Nsanje	16	4
Nkhata Bay	22	4
Mchinji	22	4
Thyolo	26	8
Ntchisi	18	4
Machinga	20	4
Total	124	28

A subset of schools were selected from among those above to participate in focus group discussions for school level analysis. The following tables show the number of schools involved.

Table 2-3: Number of Schools in the Sample for School-Level Analysis

Schools	Primary		Secondary	
	Urban	Rural	CDSS	CSS
Experimental	10	10	8	0
Control	2	2	2	2
Total	12	12	10	2

The 24 primary and 12 secondary schools were selected on the basis of their pilot participation. For primary schools, four schools were to be selected from the 124 schools that fit the six different pilot configurations shown on the next table:

Table 2-4 : Primary Schools Selected for School-Level Evaluation

Pilot Configuration	Urban Schools	Rural Schools
6. Construction data accuracy in-service	Nkhata Bay -Chikale Mchinji – Lombwa	Nkhata Bay- Mlare Mchinji-Sunama
5. Teacher in-service and in-service for educational managers	Ntchisi-Kalinganya Mchinji-Matuwamba	Ntchisi-Mtuwanjovu II Nkhata Bay- Nkwali
4. Public awareness Sanitation and in-service	Nkhata Bay -Bandawe Thyolo -Luchenza	Thyolo -Konzalendo Machinga-Kayuni
3. Furniture and in-service	Nsanje-Chigumukire Machinga-Chinduzi	Ntchisi - Mtsiransembe Thyolo-Mberenga
2. Public Awareness and sanitary constructions	Machinga-Liwonde Mchinji –Bua	Machinga-Mikachu Thyolo-Mpinji
1. Schools with minimal participation.	Nsanje –Bangula Nsanje -Nyamadzere	Ntchisi -Nyanga Nsanje -Mtawira

The subset 12 secondary schools chosen from among the 28 secondary schools for the district study needed to be in line with the six pilot configurations as shown in the next table:

Table 2-5: Secondary Schools Selected for School-Level Evaluation

Pilot Configuration	CDSS	CSS
6. School construction; and classroom furniture	1. Maula- Nkhata Bay 2. Tukombo- Nkhata Bay	
5. Instructional materials with teacher in-service and classroom furniture	1. Mtambanyama- Thyolo 2. Bvumbwe- Thyolo	
4. Improvement in quality of data collection and reporting; and classroom furniture	1. Mawiri- Ntchisi 2. Bua- Mchinji	
3. Science laboratories, or kits including supplies; classroom furniture	1.Chinkwezule- Machinga 2.Kayoyo Ntchisi	
2. CDSS with minimal interventions for managers	1. Mtowe- Nsanje 2. Magoti- Nsanje	
1. CSS with no interventions		1. Puteya- Machinga 2. Ludzi Girls' - Mchinji

In some cases, it was necessary to revise the original sample of 124 primary and 28 secondary schools so that new schools would fit the pilot configuration definitions. Adjustments were made accordingly during the discussions at baseline stage. An estimation was made as to the total number of students in appropriate standards and forms selected for pilot schools participating in achievement tests. These actual number of students taking the examinations are displayed in the table below for the 24 and 12 pilot schools. Every teacher in these standards and forms in the sample schools were also tested. Since the baseline, mid point and post pilot surveys were conducted across three separate academic years, new cohorts of students were tested each time. The same teachers were tested in most cases, with the exception that new teachers assigned to these grade levels were included while others that leave the schools were not.

Table 2-6: Number of Pupils/ Students Tested at Mid and Post Evaluation Studies

Level	Sex	Mid-point	Post Pilot
Standard 4	Boys	496	1065
	Girls	503	1042
	Total	**999**	**2107**
Standard 6	Boys	397	842
	Girls	378	922
	Total	**775**	**1764**
Form 1	Boys	269	518
	Girls	247	516
	Total	**516**	**1034**
Form 3	Boys	212	504
	Girls	152	388
	Total	**364**	**892**

Participants in the focus groups were selected from the pilot school area as well as those schools designated as control. Standard 4 and 6, form 1 and 3 students and teachers were selected to participate in the focus groups while community members participating as members of the school committee or the PTA were selected. School level managers included anyone assigned to the TDC if attached to the pilot school, the head teacher and other assistant managers. The district level focus groups included CPEAs, cluster heads, the DEM and others such as district planners.

2.5 Delimiting Factors

As a social inquiry, it was not possible to control the environments using an experimental approach. Thus, it was not possible to control for all variables. Interventions due to other donor activities may create outcomes, confounding the results of this study. For example World Food Programme is operating in some schools with the impact of increasing enrolment, especially for girls. Since enrolment is a key indicator of this study, it will be impossible to attribute change in enrolment in these schools as a result of NIPDEP project interventions. Other factors are beyond the control of the study, and attempts were made to identify and explain these situations in the case study analysis.

District scores for indicators are based on averaging scores from pilot schools participating in this study. Although the percentage is rather high, around 15 percent, an error of measurement was introduced when drawing conclusions about district level results. The same is true when looking at average scores for schools participating in similar pilots. Although schools were selected having similar pilot configurations, the match is not exact. While one school may have in-service for all teachers, others may have in-service for a select number. Thus, the averaging of the scores for these schools representing one classification of pilot project configuration may not have been as precise as hoped.

CHAPTER THREE: RESULTS FROM THE QUANTITATIVE DATA

3.1 Introduction

The NIPDEP Development Study aimed to strengthen mechanism for implementing the district education plans and build capacity in planning and implementation of DEPs by local staff in the context of decentralization policy. By meeting the objectives mentioned above, the Study was expected to contribute qualitative and quantitative improvement of primary and secondary education in Malawi. These evaluations were meant to assess the extent to which the implemented projects had achieved these objectives. Results of issues on access, quality and efficiency are presented followed by achievement test results.

3.2 Quantitative Results

3.2.1 Access

The data for the quantitative analysis mainly came from the school to district level data form which was primarily quantitative in nature. These data were collected to help to gauge the impact of the projects as implemented by the different districts. The projects which would have such an impact quantitatively on access were projects like:

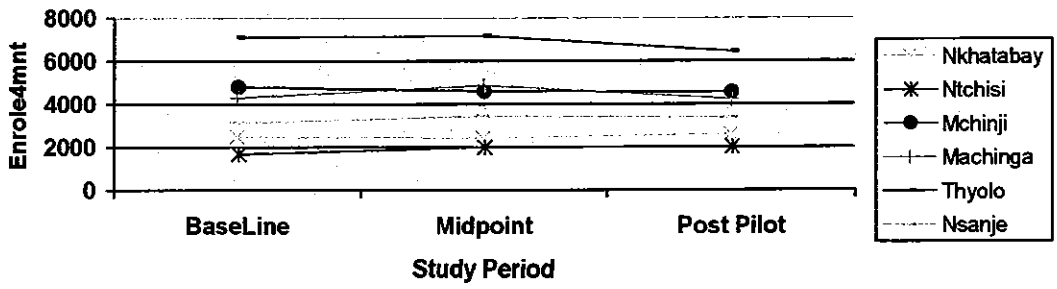
- Machinga education awareness campaign
- Provision of water and sanitary services in primary schools
- Construction of classroom blocks and teachers houses in primary schools
- Construction of classroom blocks and teacher's houses in CDSS

Access essentially implies the amount of space available to pupils or the room that can be created for the teaching learning process at school. However, as was pointed out by the Machinga annual report for 2003 projects, some of these projects have long-term impacts and would therefore take long to have their objectives achieved.

It was noted during the midpoint survey that in Machinga, the awareness campaign had marked positive impact. In this district, the campaign was done in collaboration with the chiefs who mobilized their people to get their children to school. It was observed during the field survey that in some schools, the campaign was so successful to the extent that there were so many children who had been wooed to schools but the schools would not manage them. The results of such campaigns as was in Machinga demonstrated the challenges faced by countries like Malawi in the drive towards education for all where people may indeed be willing to come to school but where the system does not have the infrastructure to adequately support the schools.

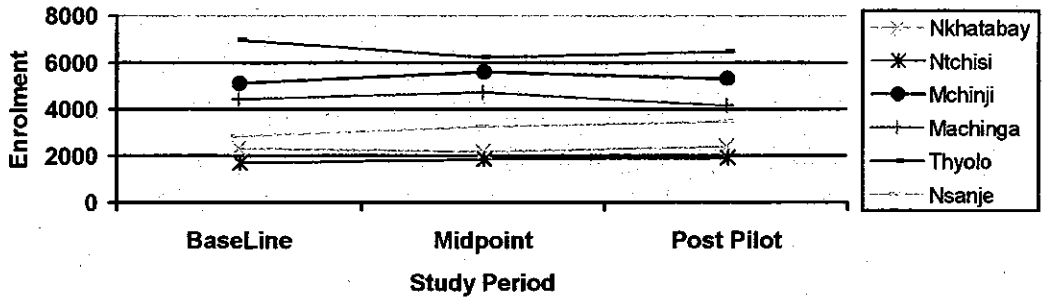
The graphs that follow provide information about the post pilot situation. All information on enrolment was from the forms sent to schools. Figures 3-1 and 3-2 present the enrolment levels from the sampled schools at the three points.

Figure 3-1: Boys' Enrolment by District



For boys, enrolment increased in all the districts except in Mchinji which dropped at mid point and slightly increased at post pilot. However, from figure 2, it can be noted that girl's enrolment increased in Mchinji. There were more increases in enrolment for both boys and girls in Machinga district at midpoint but decreased at post project. This was the results of the wave of children into schools which resulted after the mobilization and sensitization campaign. In Thyolo, enrolment for girls decreased at midpoint and slightly picked up at post pilot.

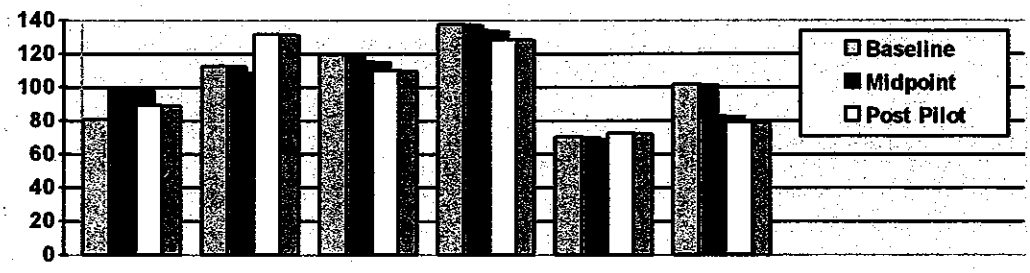
Figure 3-2: Girls' Enrolment by District



A close examination of the enrolment trends from the schools revealed the usual picture of diminishing enrolment figures as pupil's progress to higher standards. Girls' enrolment diminishes faster than that of boys, an indication that there are still serious problems of girl's education in Malawi primary schools. Thus, while the numbers of boys and girls are almost equal in the lower standards, it appears that differential household, school and community expectations about boys and girls exert different pressures to affect the education of boys and girls differently in Malawi. A pertinent question then becomes why should this be so despite the massive efforts to improve girls' education in Malawi?

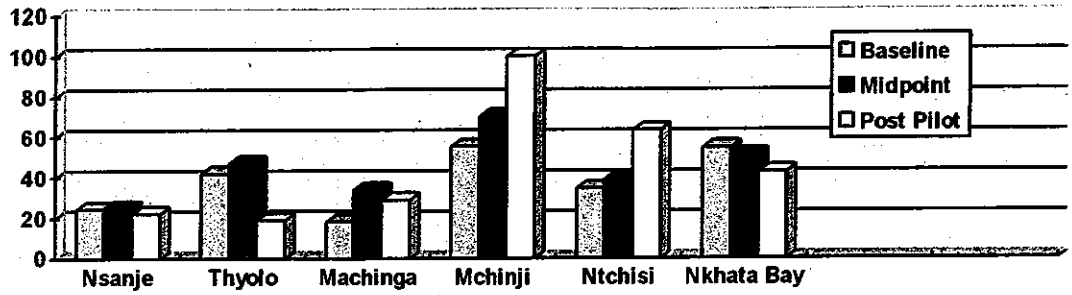
The classroom space available for pupils can be an indication of the learning environment. Figure 3-3 below presents the classroom pupil ratio for the districts

Figure 3-3: Classroom to Pupils Ratio- Primary



Problems of classroom shortage have persisted in Mchinji, Machinga and Thyolo districts where over 100 pupils are in one class. The situation in Nkhata Bay improved between baseline and the other study points. Ntchisi had the least classroom pupil ratios but this might be an indication of the overall low levels of enrolment due to schooling problems in the district. In general, these results indicate shortages of classroom in primary schools. Other studies (SACMEQ 2005, and Chimombo et al. 2003) have also indicated serious classroom shortages at the school level where about a third of all classes are held outside under trees (Chimombo et al. 2003). Figure 3-4 presents classroom availability for secondary schools.

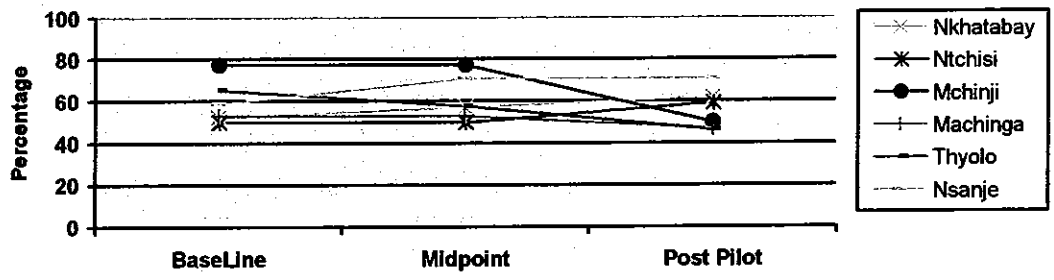
Figure 3-4: Classroom to Pupils Ratio- Secondary



From Figure 3-4 above, it can be seen that there were also problems of classroom shortage at the secondary school level in Mchinji district followed by Nkhata Bay. Nsanje district had the least problems in terms of classrooms shortage followed by Thyolo district. In terms of pupils classroom ratio, the situation was better in secondary schools.

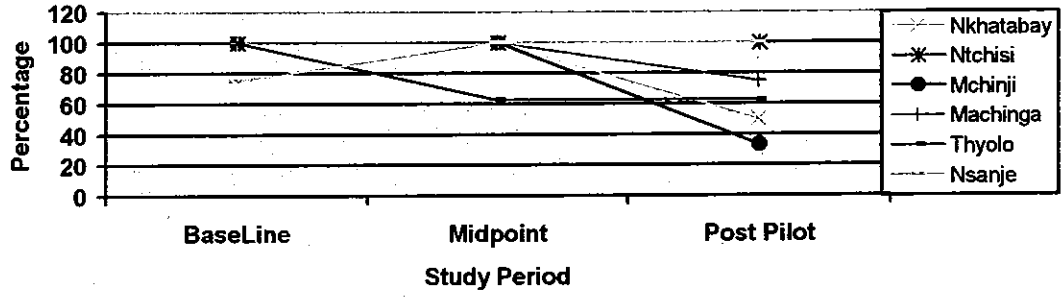
Schools were also asked to indicate if they had clean water or not. Figure 3-5 below contains the percentage of schools with adequate and clean sources of water for the primary schools in the districts.

Figure 3-5: Percentage of Primary Schools with Safe Water



It can be noted from the figure that at post pilot, the availability of water in Mchinji drastically decreased. There also has been a steady decrease in the percentage of schools with safe drinking water in Thyolo while the availability of water had increased in Nsanje, Nkhata Bay and Ntchisi districts. It can be noted that up to 50% of the schools had no water in some districts at post pilot.

Figure 3-6: Percentage of Secondary Schools with Safe Water



At the secondary school level, only Ntchisi had a 100% provision of water. The most striking feature is the tendency for water availability to decrease in most of the schools. This might be an indication of the maintenance problems schools face. Further, the fact that the provision of safe drinking water was

low and decreasing should be a worrying sign for the ministry given the negative effects that may result from the absence of water in schools especially on girls.

Another indicator of access especially for girls is the availability of toilets in schools. Figures 3-7 and 3-8 contain the information about toilet to pupil ratios for boys and girls respectively in primary schools.

Figure 3-7: Latrine Pupils Ratio for Boys- Primary

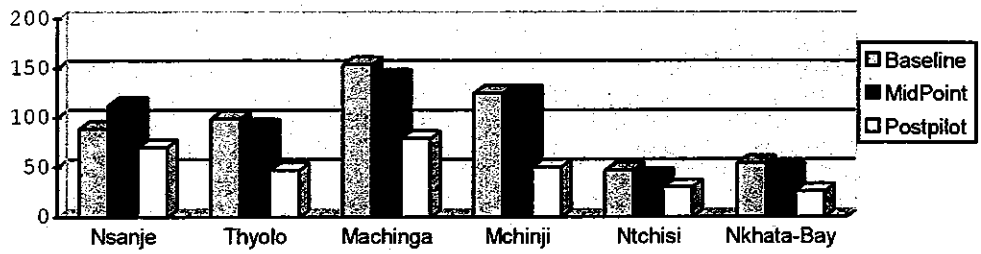
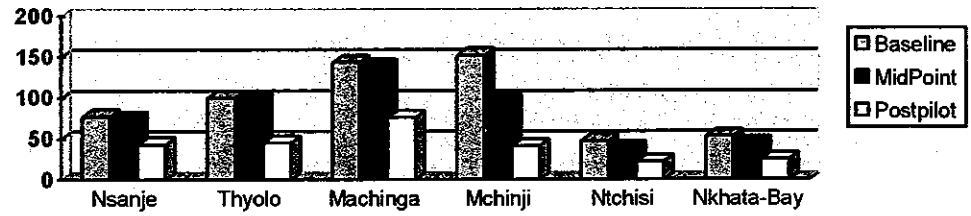


Figure 3-8: Latrine Pupils Ratio for Girls- Primary



It can be observed from the figure that in the primary schools, the provision of toilet facilities has greatly improved for both boys and girls. Nkhata Bay had the least toilet pupil ratios seconded by Ntchisi district. This was an indication of improved provision of toilet facilities in the districts. There is however some room for improvement for the provision of toilets in Machinga district.

In Tables 3-9 and 3-10 below, information about the situation in terms of teachers' housing has been presented. It can be noted from the tables that the number of houses available to teachers in the sample schools were different in the different districts.

Figure 3-9: House Teacher Ratio- Primary

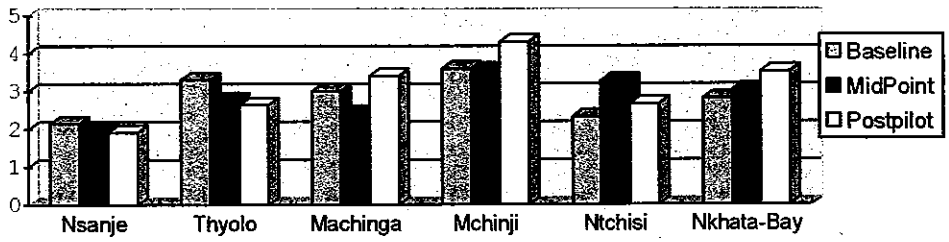
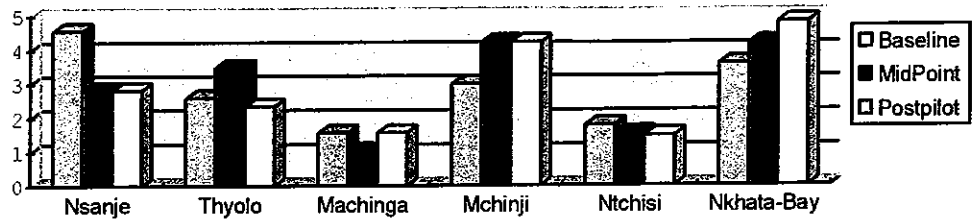


Figure 10: House Teacher Ratio - Secondary



During the mid point evaluation the teacher to house ratio in primary schools improved in Nsanje, Thyolo and Machinga and worsened in Ntchisi and Nkhata Bay but remained the same in Mchinji as at the time of the baseline study. At secondary school level the teacher house ratios improved in Nsanje, Nkhata Bay, Machinga and Ntchisi while the situation worsened in Thyolo and Mchinji. However, at post pilot, house teachers ratio increased in Mchinji, Nkhata Bay and Machinga in primary schools. At the secondary school level, there were more problems of shortages of teachers' houses in Nkhata Bay and Mchinji districts. These figures indicate the general problem of lack of teacher's houses in Malawi's schools.

3.2.2Quality

In Malawi, the quality of education is very poor (see SACMEQ reports). It is not surprising bearing in mind the evidence of poor quality of education that the major focus of the JICA NIPDEP program was on attempting to improve the quality of education. Over half, (21) of the 40 projects to the six districts attempted to provide minimum standards for quality education. This is an indication that although Malawi has made great strides towards improving access, a lot more needs to be done to improve the quality of education being offered. These projects ranged from the provision of in-service for teachers to the provision of furniture and other facilities (such as textbooks) as well as the provision of water and sanitary services. The results from the post pilot study which are related to quality issues are discussed below. First examined was the quality of teachers through an examination of the percentage of untrained teachers in figures 3-11 and 3-12 for primary and secondary schools respectively.

Figure 3.11: Percentage of Unqualified Teachers in Primary Schools

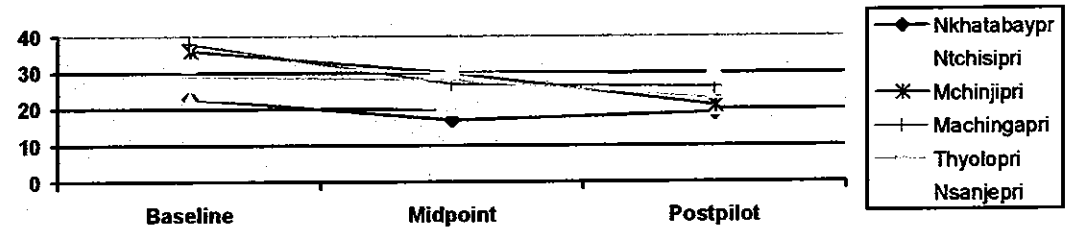
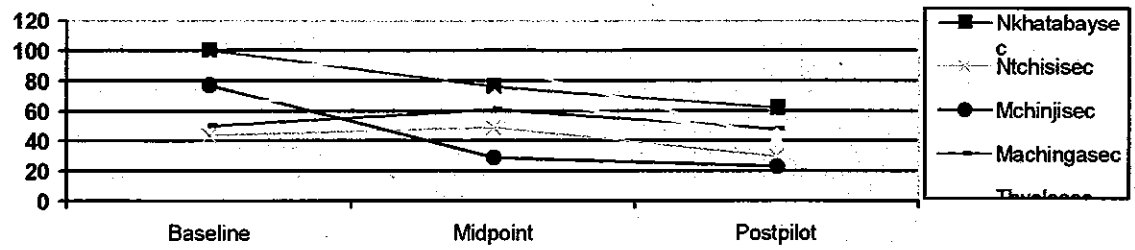


Figure 3.12: Percentage of Under Qualified Teachers in Secondary Schools



Generally, there have been decreases in the percentage of untrained teachers in both primary and secondary schools. This might be an indication of improved teacher distribution by either the division or district education offices. In both primary and secondary, the percentage of untrained teachers decreased at a faster rate in Mchinji district. It should however be noted that there are more problems of teacher quality in the secondary schools essentially because most of the teachers there are primary school trained teachers.

Next examined is the frequency with which schools were visited by PEAs and SEMAs. These are the people who are supposed to enforce rules in school management and ensure that these schools are operating according to the prescribed norms and standards. This information is contained in figures 3-13 and 3-14 for primary and secondary schools respectively.

Figure 3.13: Inspector/PEA Visit Per School

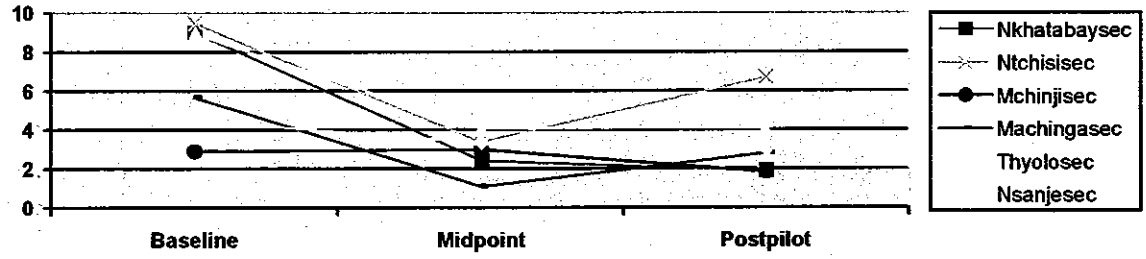
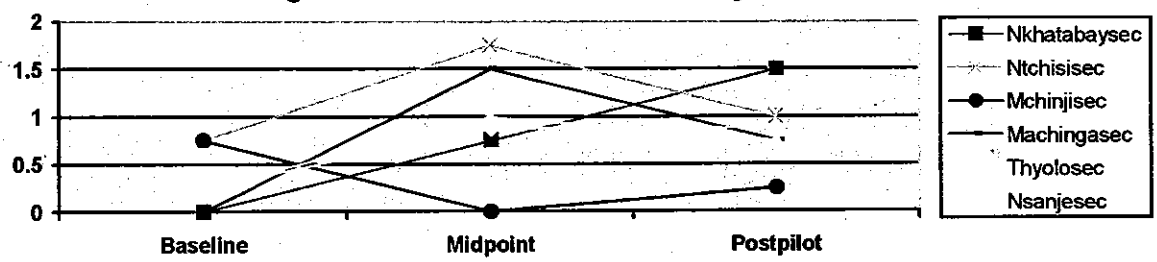


Figure 3.14: SEMA Visit Per Secondary School



The average number of visits by PEAs decreased from baseline to midpoint and picked up again at post pilot in primary schools. At the secondary school level, it was the reverse (with the exception of Mchinji) where the average number of visits increased from baseline to midpoint and decreased with the exception of Nkhata Bay. However, despite the increase in secondary schools, these visits are still too few and scattered.

The next qualitative indicator to be discussed is the number of pupils/students to a desk. Pupils need a place to sit if they are to concentrate in their studies or develop good writing habits. In fact it is

generally thought that problems of lack of desks in schools might lead to problems of dropping out especially for girls. In figures 3-15 and 3-16, information about the desk pupil ratios is presented.

Figure 3.15: Desk Pupil Ratio for primary Schools

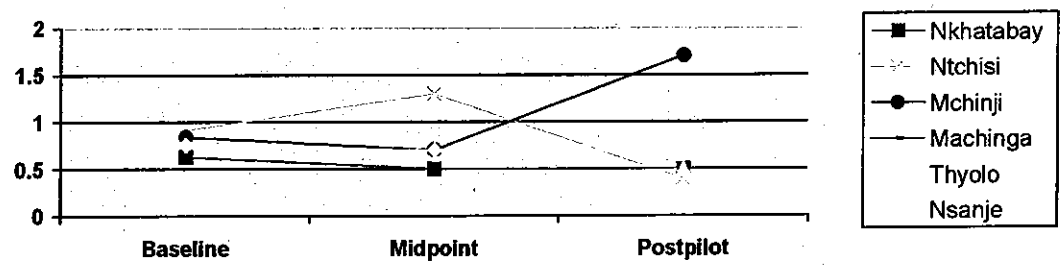
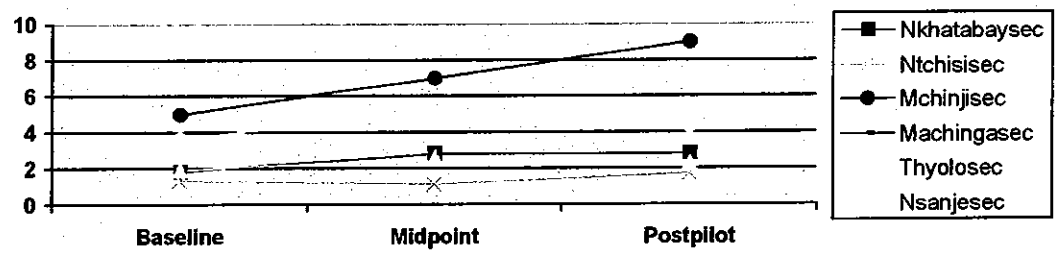


Figure 3.16: Desk Pupil Ratio for secondary Schools

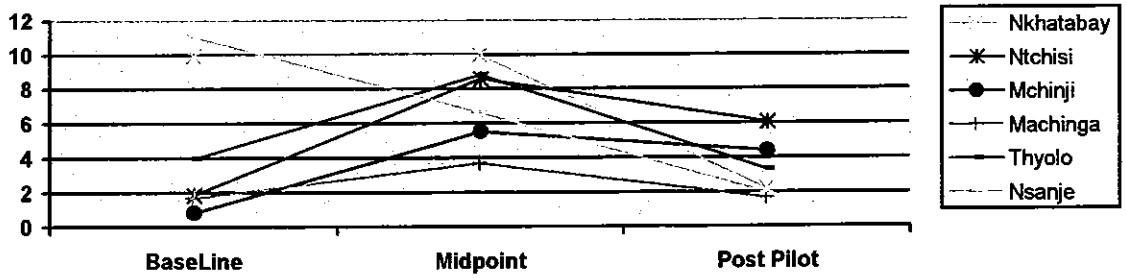


There were more shortages of desks in primary schools especially in Mchinji district and to some extent in Thyolo. Ntchisi district consistently had the lowest number of pupils to a desk. At the secondary school level, Mchinji exhibited more problems of shortage of desk despite having been given desks in phase I. There were however a seemingly over supply of desks in Nsanje and Thyolo districts. While it is difficult to explain the over supply of desk in Nsanje at baseline, the task force in Nsanje bought more desks than had originally planned and supplied surplus desk to other schools as well.

3.2.3 Efficiency Issues

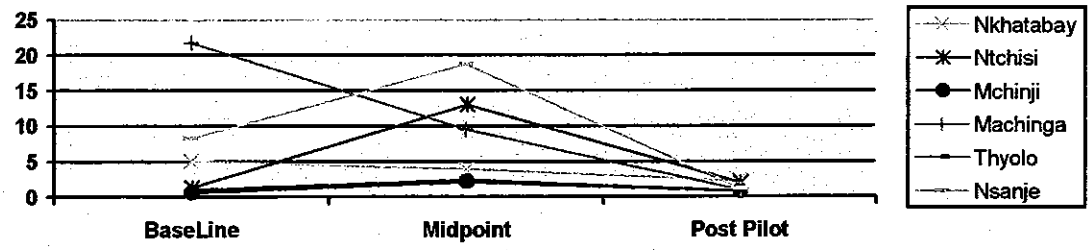
It may be understood that overall, system-wide measures concentrating on better infrastructure, more textbooks, better trained teachers, and others, will only have a limited impact on the education system unless complementary action is taken to improve the functioning of the schools. One way of assessing the function of schools is to examine pupils' flow in terms of repetition and dropout rates as well as overall attendance levels. Information was therefore collected regarding these indicators in these evaluation surveys. Figure 3-17 below gives information about the incidence of absenteeism for primary school pupils.

Figure 3.17: Pupil Absenteeism - Primary



At the primary level, the rate of absenteeism in general increased from baseline to midpoint and then decreased at post pilot in all but one district. In Nsanje however, absenteeism consistently decreased from baseline. As pointed out during midpoint evaluation, one of the possible explanations for the increase in absenteeism at midpoint was that the evaluation was carried out at the very beginning of the academic year when attendance had not yet stabilized and as such, most of the pupils were still taking a less serious approach to schooling. But it is also possible that the mobilization and community awareness projects have had some positive impact on raising the importance of education.

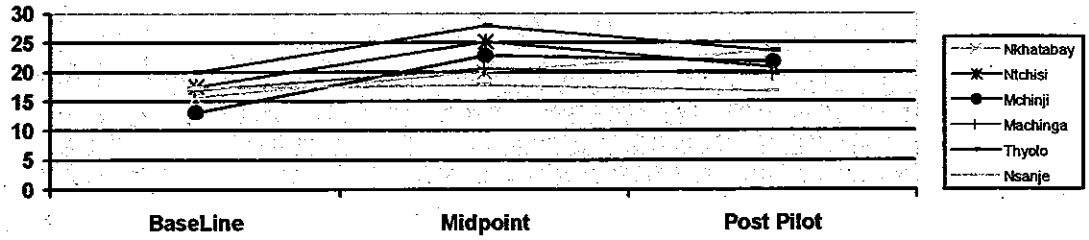
Figure 3.18: Pupil Absenteeism - Secondary



At the secondary school level, absenteeism for Thyolo and Mchinji at midpoint were generally low although there were slight increases. Absenteeism in these two districts almost disappeared at post pilot. In Nsanje and Ntchisi, absenteeism had more than doubled at midpoint but drastically decreased at post pilot. It was only in Machinga where absenteeism had consistent decreased probably because of the awareness campaign project. There was also a declining trend on absenteeism in Nkhata Bay.

The next indicator to be discussed under efficiency is repetition. The calculation of repetition was based on information on enrolment from previous years (e.g. for 2002 and the numbers of repeaters in 2003 at baseline). This gives a very accurate calculation of repetition (all other things being equal). Figure 3.19 below presents the results of the calculation for primary.

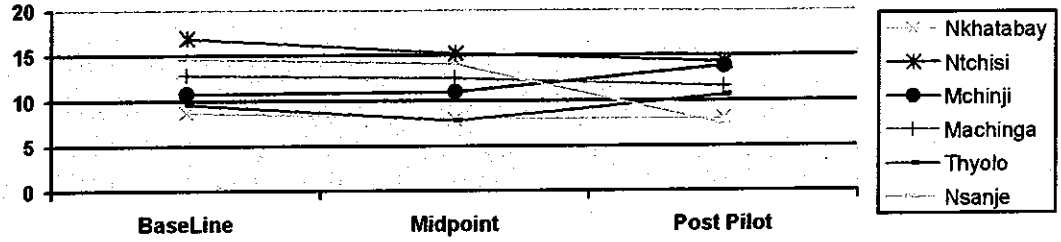
Figure 3.19: Pupils Repetition - Primary



The figure shows that at midpoint, overall, repetition had increased for Thyolo, Mchinji Nkhata Bay, and Ntchisi and to some extent in Machinga. The situation in terms of repetition had not changed for Nsanje district. With the exception of Nkhata Bay where repetition was steadily increasing, the general trend in the other districts was one of decreasing at post pilot. Repetition at secondary school level was generally low in all the districts except in Ntchisi so it was not worthwhile reporting.

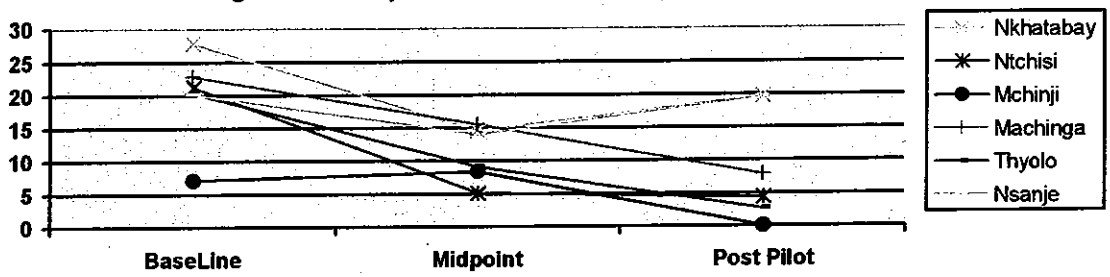
The last indicator of efficiency to be discussed is dropout rate. This is a crude measure of dropout because we could not collect all the necessary pieces of information to accurately measure dropout. Figures 20 and 21 present information about dropout rates in primary and secondary schools respectively.

Figure 3.20: Dropout Rates in Primary Schools



At the primary school level, the general picture portrayed by figure 3.20 is that there were no major differences in terms of dropout at the first two points of the project evaluation. However at post pilot, there was a big decrease in Nsanje, and slight decreases in Machinga and Ntchisi. Dropout rates increased in Mchinji and Thyolo districts. These figures are an indication of the low levels of efficiency in the Malawi primary schools.

Figure 3.21: Dropout Rates for Secondary Schools by District



At the secondary school level, dropout rates decreased in all the districts except Mchinji. Dropout rates decreased in Mchinji at post pilot evaluation and this was also the case for Thyolo, and Machinga districts. Dropout rates were more at post pilot evaluation than at midpoint in Nkhata Bay and Nsanje districts. These figures are giving mixed trends regarding the situation in terms of dropouts in the secondary schools. It should be noted that the unification of conventional and distance education schools policy brought a lot of problems into Malawi's secondary education sector and may be the high dropout rates above are just an indication of such problems.

3.3 Results of Achievement Testing

Most of, if not all, interventions aim at improving the effectiveness of the education system and, hence, the literacy and numeracy achieved by pupils. In the same vein, it was expected that the interventions under the JICA program were to contribute towards this end. The design for the evaluation of the JICA projects therefore included some measurement of learning achievement levels by the pupils. Teachers were also asked to provide answers to the test questions. This section presents the results of the same test at the three points of the evaluation.

Under the JICA NIPDEP baseline survey activities, Malawi Institute of Education (MIE) was assigned the responsibility of developing, administering and scoring Mathematics and English achievement tests. These tests were for standards 4 and 6 and forms 1 and 3. The tests were administered to 60 pupils per class in 24 primary schools and 50 students per class in 12 secondary schools in six pilot districts. This was supposed to make 120 pupils per primary school and 100 students per secondary school. Apart from the pupils/students, these very same tests were also administered to the class teachers for the two subjects.

During the mid-term evaluation, the Malawi Institute of Education was assigned the responsibility of reviewing standard 4, standard 6, form 1 and form 3 tests in Mathematics and English based on the

existing test forms and the lessons learned from the Baseline Survey. In all three studies, MIE prepared a testing schedule, printed the tests and conducted the tests in 24 primary schools and 12 secondary schools. Thereafter MIE was to score, average and input the results by district and submit to CERT and JICA. What follows are the results of the analysis of the pupil and teachers' scores which was done by MIE and CERT.

3.3.1 Objectives of the Achievement Tests

The general objective of the achievement tests was to find out if the interventions provided by JICA under NIPDEP had resulted in the improvement in performance of pupils in standards 4 and 6 and students in forms 1 and 3 in Mathematics and English in the targeted districts.

Specifically, the objectives of administering the tests are five-fold:

1. To find out the mix of inputs and processes with the greatest impact on the student classroom performance
2. To determine if the pilot projects have achieved the desired effect on the system
3. To determine the impact of the intervention on teacher performance (this involves assessing the changes in the classroom teachers performance as a result of the interventions by administering the tests to them as well)
4. To determine the effect of the interventions on student learning
5. To measure the impact of the interventions on narrowing the gender gap in pupil performance in Mathematics and English.

3.3.2 Test Construction

Initially, tests were to be selected from those available internationally. It was decided there was insufficient time to acquire them. MIE, instead, constructed tests based on the existing curriculum. Items were selected from the entire curriculum, although the tests were administered one term before the end of the school year so that one or more items may have been selected from topics that had not been taught. Items were provided spaces for the correct answer to be inserted rather than as multiple choice test items. Tests were to be timed to be completed within one classroom period. No item analysis was conducted to determine difficulty level of each item. The same tests were administered to teachers as were administered to students. Since different cohorts of students would be taking the tests from the mid point to post pilot, the same tests were used both times. Tests were administered 12 months apart in June of 2004 and 2005.

3.3.3 Methodological Issues

The methodology used in the achievement tests involved a number of areas as follows. The target population was pupils in the designated classes and forms in the 36 schools from the six districts as outlined in chapter two above. At each primary school a total of 60 pupils were selected randomly per class while at the secondary school level a total of 50 students were selected per class. In cases where there were more pupils/students the sample included equal numbers of boys and girls selected randomly. However, in reality not all schools had 60 pupils/50 students. Some schools had fewer pupils/students. A summary of the total number of students tested was provided in chapter two above.

The second term of the academic year was chosen for administering these achievement tests. The assumption was that the schools would have covered sufficient ground in the curriculum by this time. The subjects chosen were English and Mathematics. A total of eight different achievement tests were prepared for standards 4 and 6 at primary school level and forms 1 and 3 at secondary school level.

The English tests consisted of two or three reading comprehension passages followed by structured or open ended questions. In Mathematics, for both primary and secondary schools, the test items covered all the Mathematical skills as outlined in the curricula. The test items for both subjects were administered to the same candidates one after the other. Class/subject teachers wrote the same tests.

The test items were marked and the marks were converted into a percentage. Average marks per school were also calculated.

3.3.4 Findings at Primary School Level

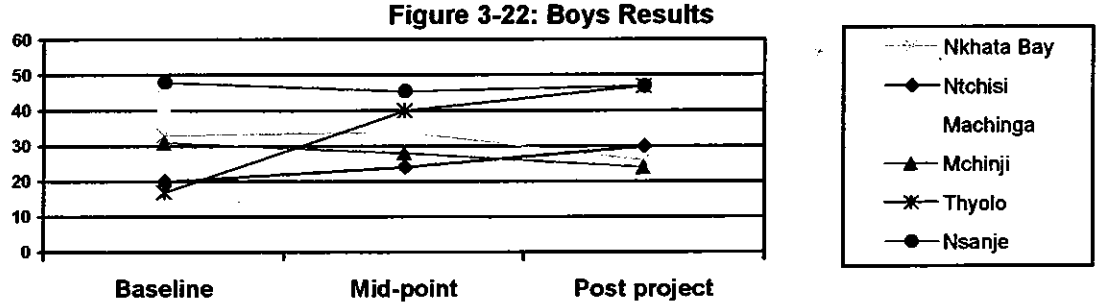
Results of the achievement test at primary school level for the post project evaluation can be found in the Appendix 1 of a separate report prepared by MIE. These tables show the performance of boys, girls and teachers in mathematics and English. Average scores are given for each school by gender. Each table carries scores for one standard and one subject in a district. However, for the purposes of this report, we present the pupils' and teachers achievement patterns at the three points of the evaluation. All results are shown as a percentage with the maximum score being 100% and the minimum score being 0%.

Table 3-1: Standard 4 Mathematics

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	33	29	87	34	26	90	26	20	96
Ntchisi	20	15	97	24	20	94	30	21	99
Machinga	39	35	97	34	25	97	36	32	91
Mchinji	31	28	98	28	27	97	24	23	97
Thyolo	17	15	100	40	42	100	47	38	97
Nsanje	48	43	98	46	43	97	47	39	97

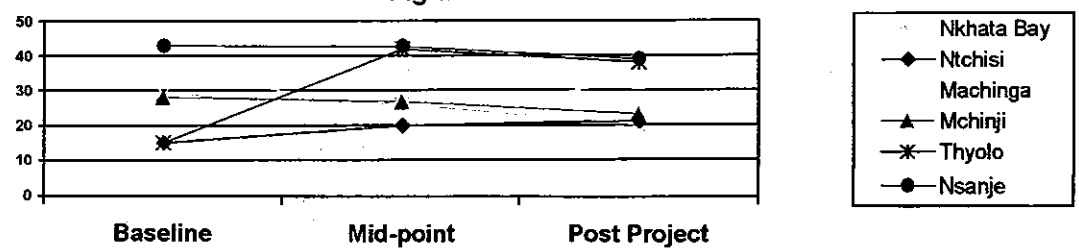
It can be noted from the table that in general pupil performance at post project evaluation far out-matched their performance at baseline and mid-point in Ntchisi and Thyolo. For the rest of the districts, pupil performance at post project evaluation was either worse (Nkhata Bay and Mchinji) or about the same (Machinga and Nsanje). The results revealed that boys out-performed girls at baseline, mid point and post project evaluation in all the districts, except Thyolo (at mid-point evaluation). There was no significant difference in the performance of the teachers at baseline, mid-point and post project evaluation. In the figure 3-22, information about the performance of boys at the three points has been presented.

Figure 3-22: Boys Results



It can be noted from figure 3-22 that compared to baseline and mid-point, boy's performance in mathematics at post project evaluation declined in Nkhata Bay, Machinga and Mchinji. Performance in mathematics however improved steadily in Ntchisi and Thyolo at all levels while it as more or less constant in Nsanje. Thyolo registered the greatest improvement, from a low of 17% at baseline, to a high of 47% at post project evaluation. Figure below presents the results for girls.

Figure 3-23: Girls Results



Girl's performance shown in figure 3-23 in Mathematics declined with time steadily in Nkhata Bay Mchinji and Nsanje. Performance however, improved in Ntchisi and Thyolo. Thyolo registered the greatest improvement over baseline from a low of 15% to a high of 38%.

Teacher's performance in mathematics markedly improved in Nkhata Bay but declined slightly in Machinga and Thyolo and remained more or less the same in Mchinji and Nsanje. In Ntchisi, their performance declined at mid-point, but shot up again at post project evaluation beating their benchmark.

Figure 3-24: Teachers Results

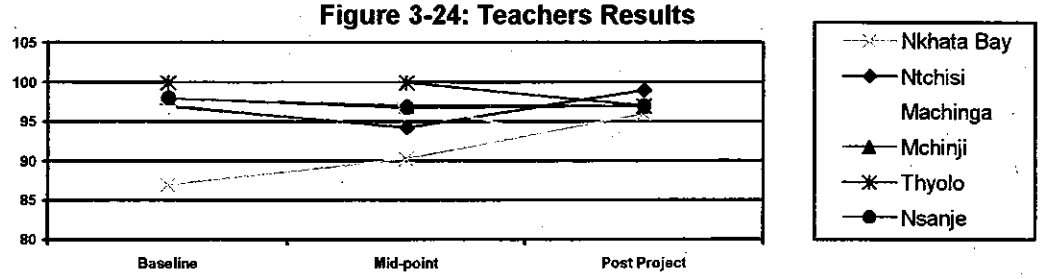


Table 3-2 indicates the overall performance of standard four pupils in English.

Table 3-2: Standard 4 English

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	13	10	79	11	10	91	6	5	100
Ntchisi	7	10	69	6	5	97	6	8	100
Machinga	20	17	78	14	14	99	19	17	97
Mchinji	10	10	77	12	12	100	8	12	98
Thyolo	43	43	77	23	32	98	21	18	100
Nsanje	17	13	77	22	20	90	25	20	98

It can be noted from the table that pupils' performance at post project evaluation showed a steady improvement from baseline through mid-point in Nsanje; a steady decline in Nkhata Bay and Thyolo, and a constant scenario in Ntchisi and Mchinji. The performance of pupils in Machinga declined at mid-point. Girls performance was better that boys in Ntchisi (baseline and post project evaluation), Mchinji (post Project evaluation), and Thyolo (mid-point). Otherwise performance of girls and boys was more or less the same, except in Nsanje where boys out performed girls throughout. Teachers' performance showed a steady improvement throughout (i.e. from baseline through mid-point to post project evaluation).

It can be observed from figure 3-25 that boys performance in English in Nsanje improved steadily throughout. Performance declined in Nkhata Bay and Thyolo up to Post project evaluation. Performance in Mchinji improved at mid-point and then declined at post project evaluation. In Machinga, it went up then down finally. It was about constant in Ntchisi.

Figure 3-25: Standard 4 English Boys

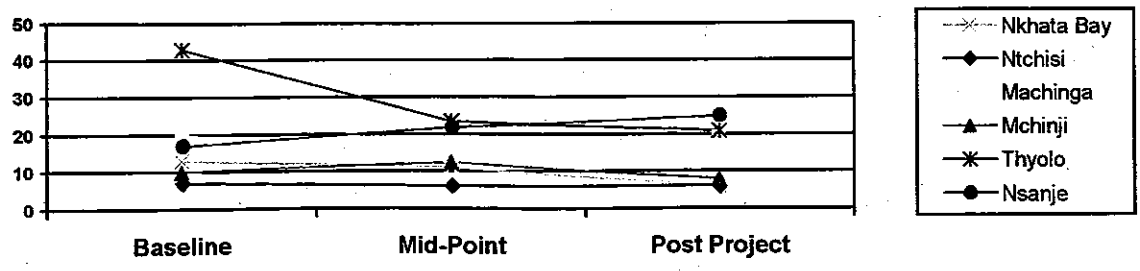
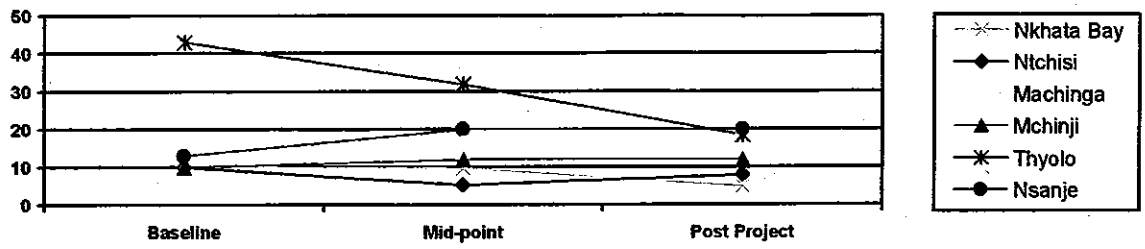


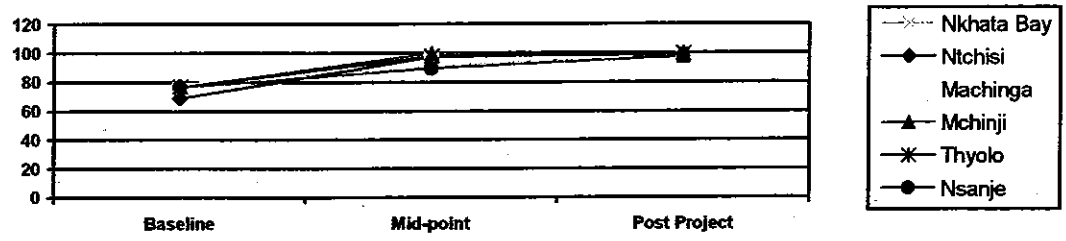
Figure 3-26: Standard 4 English - Girls



In Figure 3-26 Girl's performance improved slightly over the baseline results in Mchinji and Nsanje. Performance remained unchanged by post project evaluation in Machinga. However, performance steadily declined in Nkhata Bay, Ntchisi and Thyolo. The greatest improvement over baseline was in Nsanje, while the worst decline was in Thyolo.

The performance of teachers has been shown in figure3-27. The performance of teachers in English improved steadily in all the districts over baseline results. The greatest improvement was demonstrated in Ntchisi where their performance at baseline was 69% but ended up being among the best averaging at 100% at post project evaluation. It can be noted that there were no much differences in the achievement of teachers.

Figure 3-27: English Standard 4 Teachers



In Table 3-3, information about the performance of pupils in mathematics has been displayed. It can be noted from the table that pupils' performance showed an improvement from baseline to post project in Nkhata Bay. A decline was evident in Ntchisi and Mchinji while pupil performance in Machinga, Thyolo and Nsanje more or les remained unchanged. Boys out-performed girls in all the districts, at all the three evaluation points (baseline, mid-point and post project evaluation), except at midpoint in Mchinji and Nsanje. Teachers' performance at post project evaluation was comparable to that at baseline and mid-point. Teacher's performance generally, was more than quadruple that of pupils.

Table 3-3: Standard 6 Mathematics

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	16	14	93	19	14	65	17	15	80
Ntchisi	22	20	80	21	21	83	14	9	80
Machinga	19	14	81	14	14	58	17	14	79
Mchinji	17	16	93	16	16	75	15	11	75
Thyolo	23	21	91	23	21	79	24	21	88
Nsanje	24	24	81	19	24	84	23	18	83

In figures 3-28 and 3-29, information about the performance of boys and girls has been presented respectively.

Figure 3-28: Standard 6 Boys Mathematics

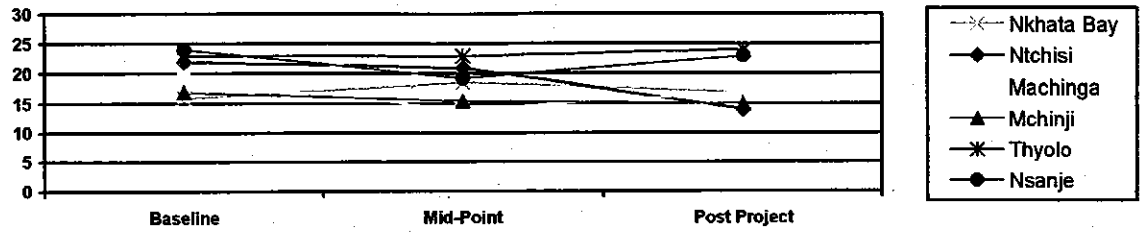
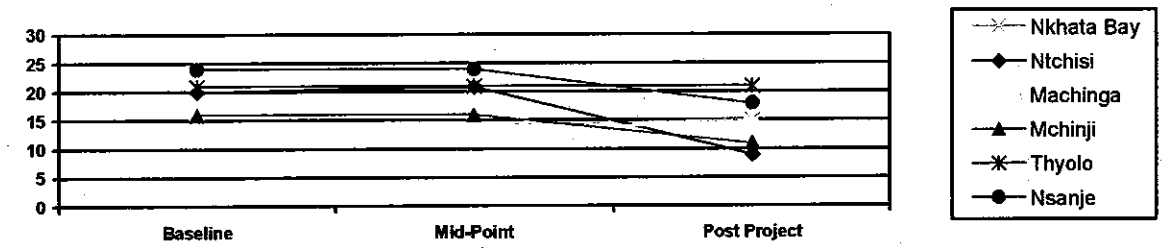


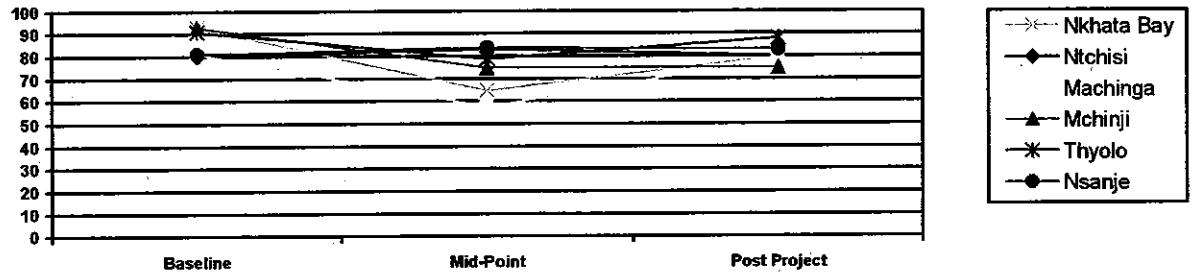
Figure 3-29 Standard 6 Mathematcis Girls



It can be noted from the figure that the performance of Standard 6 boys in mathematics slightly over baseline in Nkhata Bay and Thyolo, but declined in Ntchisi, Machinga, Mchinji and Nsanje. As for girls, the results showed that standard 6 girls performance in mathematics improved over baseline in Nkhata Bay, but performance remained more or less the same in Machinga and Thyolo. However, performances decreased in Ntchisi, Mchinji and Nsanje.

In figure 3-30 below, information about the performance of teachers has bee presented.

Figure 3-30: Teachers Results



It can be noted from the figure that the performance of Standard teachers in mathematics improved imperceptibly over baseline in Nsanje, but remained more or less the same in Ntchisi, and declined slightly in Nkhata Bay, Machinga, Mchinji and Thyolo.

The performance of both Standard 6 pupils and teachers in English has been presented in Table 3-4. It can be noted from the table that the pupil performance of Standard 6 pupils at post project evaluation showed an improvement over baseline results in Nkhata Bay. The opposite was true for Mchinji, where a decline in pupil performance was evident at post project evaluation. In the rest of the districts, pupil performance did not show a significant change, either way.

Table 3-4: Standard 6 English

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	14	15	93	29	25	96	25	28	95
Ntchisi	17	21	61	16	25	78	18	16	88
Machinga	39	36	80	32	44	82	33	34	98
Mchinji	26	30	87	35	36	68	21	23	92
Thyolo	44	44	72	40	40	94	36	41	93
Nsanje	43	42	82	34	37	89	36	35	98

At post project evaluation, girls out-performed boys in all the districts, except Nsanje while at mid-point, the girls also out-smarted boys in all the districts except Nkhata Bay. Teachers' performance demonstrated a steady improvement in all the six districts from baseline through mid-point to post project evaluation. Generally, their performance trebled that of pupils.

In figures 3-31 and 3-32, information about the performance of boys and girls in English has been presented. It can be noted from figure 3-31 that Standard 6 boys' performance in English improved over baseline results in Nkhata Bay and Ntchisi but declined in all other districts. As for girls, their performance in English showed an improvement over baseline in Nkhata Bay but for the rest of the districts fell at the time of post project evaluation

Figure 3-31: Performance of Standard 6 Boys in English

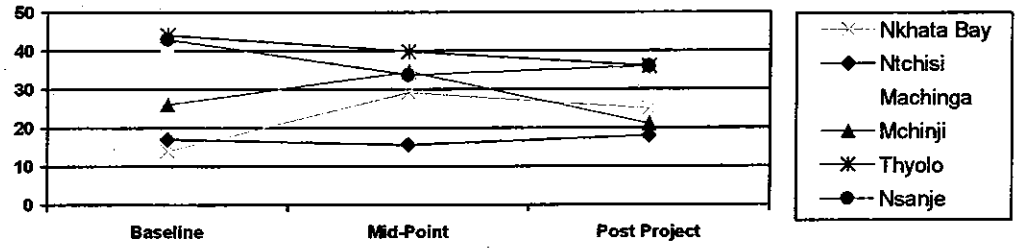
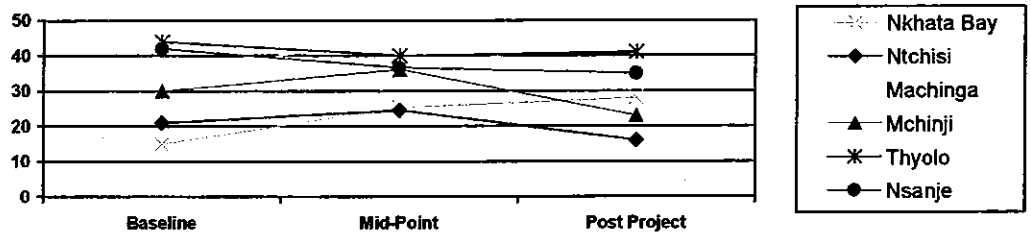
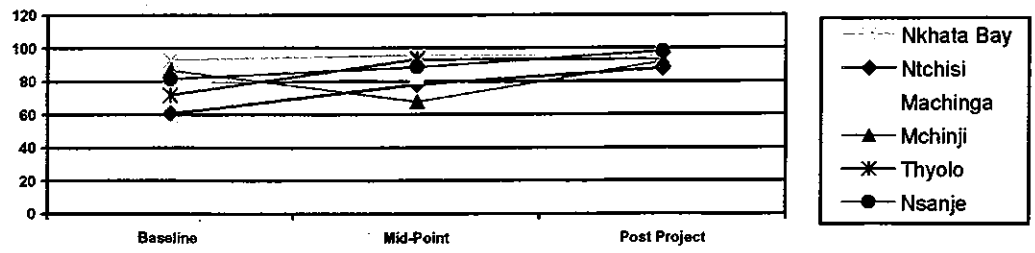


Figure 3-32: Performance of Standard Girls in English



The results for the performance of Standard 6 teachers in English have been presented in figure 3-33 below.

Figure 3-33: Teachers Results



It can be noted from the figure that the performance of Standard 6 teachers generally improved over baseline but the greatest improvement was in Ntchisi.

3.3.5 Findings at Secondary School Level

Results of the achievement test at secondary school level for the three points evaluation studies are presented next. Like the primary results, these show average marks for each school and district by gender.

The performance of form 1 pupils in mathematics has been presented in Table 3-5 below.

Table 3-5: Form 1 Mathematics

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	**Girls**	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	6	3	44	9	8	82	7	4	70
Ntchisi	2	1	38	3	1	48	3	1	90
Machinga	10	5	87	9	6	95	7	6	-
Mchinji	7	8	83	5	11	83	5	13	95
Thyolo	10	6	92	11	12	96	12	7	98
Nsanje	10	2	82	8	5	89	4	2	89

It can be observed from the table that pupil performance in mathematics at post project evaluation showed a significant improvement over baseline results in Nkhata Bay, Ntchisi, Mchinji and Thyolo. There was very little or no change in Machinga and Nsanje, especially for girls. Girls out-performed boys in Mchinji at all the three evaluation points. Boys out performed girls everywhere else, except Thyolo (Mid-point). Teacher's performance improved steadily throughout in all the districts.

In Figures 3-34 and 3-35, information about the performance of form 1 students by sex is presented. It can be noted from the figure that boy's performance in form 1 showed an improvement over baseline in Nkhata Bay, Ntchisi and Thyolo. There was a decline in Machinga, Mchinji and Nsanje. Nsanje experienced the hardest fall. Girls' performance improved over baseline in Nkhata Bay, Machinga, Mchinji and Thyolo. Their performance remained the same in Ntchisi and Nsanje. The greatest improvement was in Mchinji.

Figure 3-34: Performance of Form 1 Boys in Mathematics.

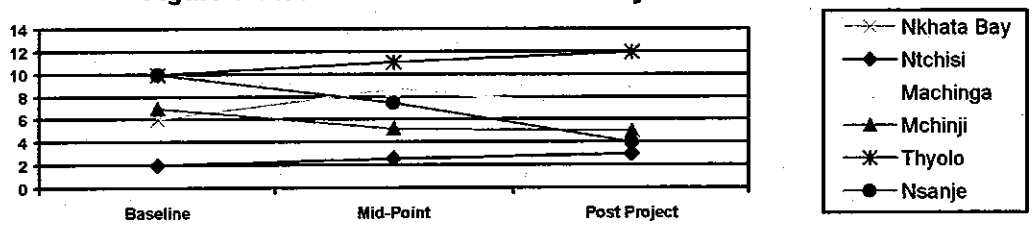
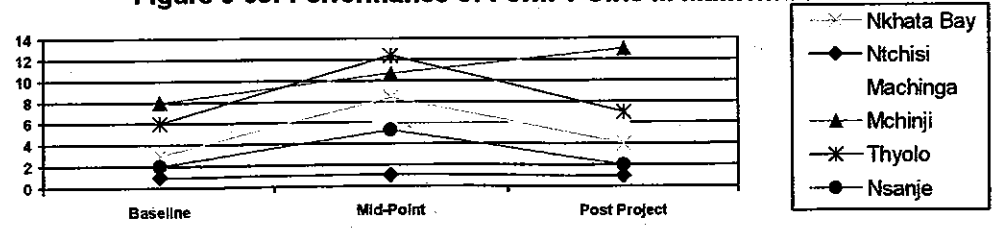
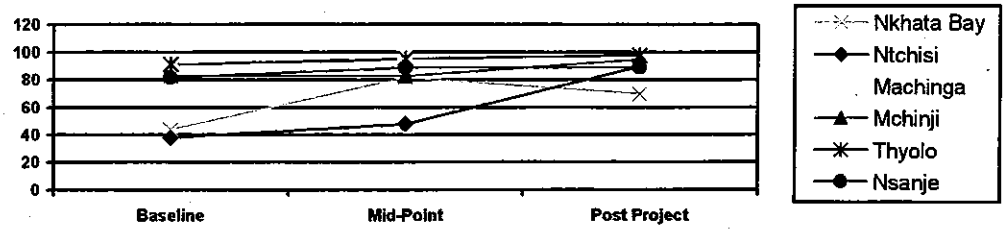


Figure 3-35: Performance of Form 1 Girls in Mathematics



The performance of form 1 teachers in mathematics is presented in figure below. It can be noted form the figure that form 1 teachers' performance in mathematics improved over baseline in all districts. The greatest improvement was displayed in Ntchisi.

Figure 3-36: Perfomance of form 1 Teachers in Mathematics



In Table 3-6 below, information about the performance of form 1 pupils and teachers in English has been presented. It can be noted from the table that form 1 pupils' performance in English at post project evaluation showed a decline over baseline and mid-point surveys in all the districts except Mchinji. Boys out performed girls in all the districts at baseline, mid-point and post project except in Mchinji and Nsanje. On the other hand, teachers' performance at post project evaluation was generally higher than baseline except in Machinga district which declined steadily from 71 at baseline to 52 at mid-point and 45 at post project. Teacher performance in Nsanje was generally low at 34 at baseline, 33 at mid-point and 41 at post project evaluation.

Table 3-6: Form 1 English

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	40	31	-	46	38	85	32	30	95
Ntchisi	27	27	35	23	24	82	29	23	98
Machinga	36	32	45	40	30	85	33	30	-
Mchinji	27	41	76	39	43	80	33	47	94
Thyolo	36	30	91	37	37	88	36	32	30
Nsanje	31	28	79	34	32	82	28	26	80

In terms of teachers, their performance improved with time in all the districts except in Thyolo where their performance declined drastically with time. What was alarming and worrisome was that the teacher average for Thyolo at post project evaluation, stood at 30 percent, well below the boys and girls average grades pegged at 36 and 32 respectively.

In figure 3-37 and 3-38, information about the performance of boys and girls has been presented respectively. It can be noted from figure 3-37 that the performance of form 1 boys in English improved over baseline in Ntchisi and Mchinji. It remained the same in Thyolo but declined in Nkhata Bay, Machinga and Nsanje. As for girls, the information in figure 3-38 shows that form 1 girls' performance in English improved over baseline in Mchinji and Thyolo. Their performance remained almost the same in Nkhata Bay and Machinga but declined in Ntchisi and Nsanje.

Figure 3-37: Form 1 Performance in English - Boys

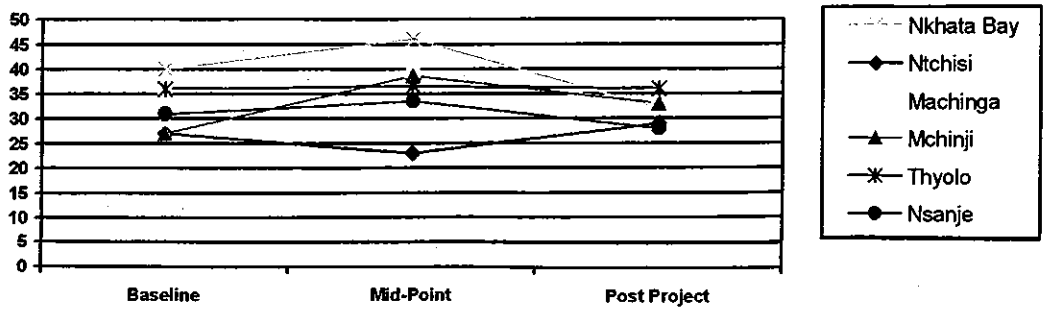
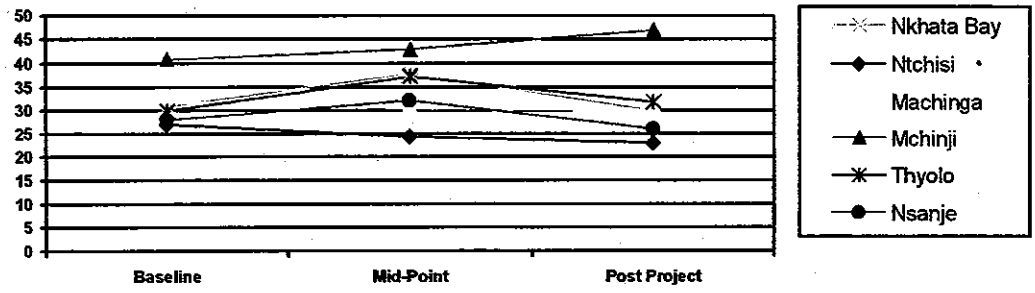
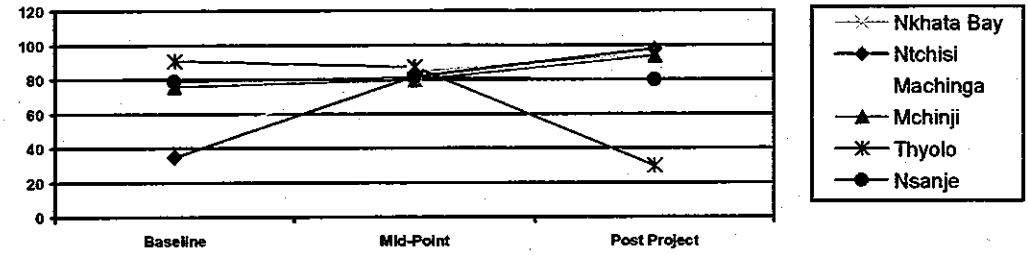


Figure 3-38: Form 1 Performance in English - Girls



The performance of form 1 teachers in English has been presented in figure below. It can be seen from the figure that there was an improvement in form 1 teacher's performance in English over baseline in all districts except in Thyolo where there was a very significant decrease in performance of 30%, at post project evaluation from a peak of 90% at baseline.

Figure 3-39: Teachers Results



The performance of form 3 students in mathematics has been presented in Table 3-7.

Table 3-7: Form 3 Mathematics

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	13	9	26	20	22	60	5	3	36
Ntchisi	6	3	56	4	3	39	5	3	68
Machinga	9	8	71	9	8	52	8	4	45
Mchinji	17	11	55	3	11	95	4	15	76
Thyolo	13	10	76	14	7	75	7	5	82
Nsanje	6	8	34	9	14	33	3	6	41

The information in the table shows that pupil performance at post project evaluation showed a decline over baseline and mid-point surveys in all the districts except Mchinji. Boys out performed girls in all the districts at baseline, mid-point and post project except in Mchinji and Nsanje. On the other hand, teachers' performance at post project evaluation was generally higher than baseline except in Machinga district which declined steadily from 71 at baseline to 52 at mid-point and 45 at post project. Teacher performance in Nsanje was generally low at 34 at baseline, 33 at mid-point and 41 at post project evaluation.

In figures 3-40 and 3-41, information about the performance of boys and girls has been presented. It can be noted from figure 3-40 that boys performance in form 3 mathematics declined over baseline results in all district; although Nkhata Bay, Machinga, Thyolo and Nsanje had registered an improvement at mid-point evaluation. From Figure 3-41, it can also be noted that girls' performance in mathematics registered an improvement over baseline results in Mchinji district only. The performance of girls was more or less constant in Ntchisi, throughout the three evaluation points. All other districts registered a decline in girls' performance. However, it is worth noting that in Nkhata

Bay where girls' performance had improved between baseline and midpoint, there was a significant fall in performance from 22 percent to only 3 percent at the post project evaluation.

Figure 3-40: Performance of Form 3 Boys in Mathematics

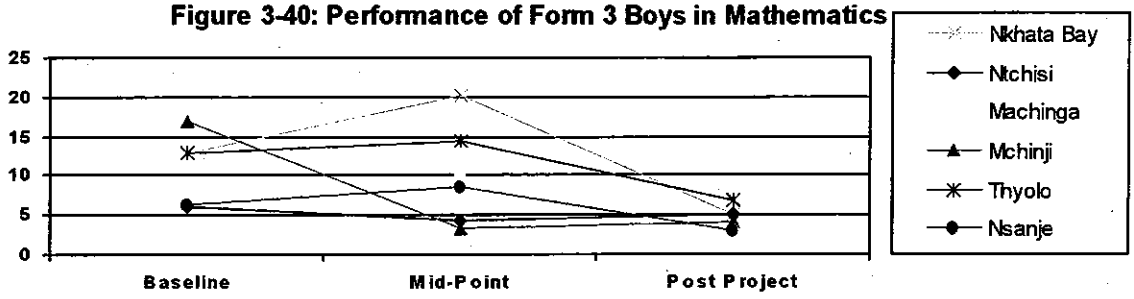
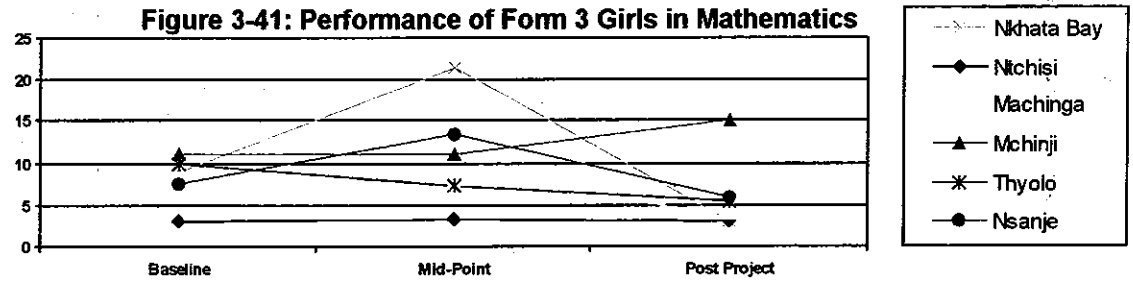
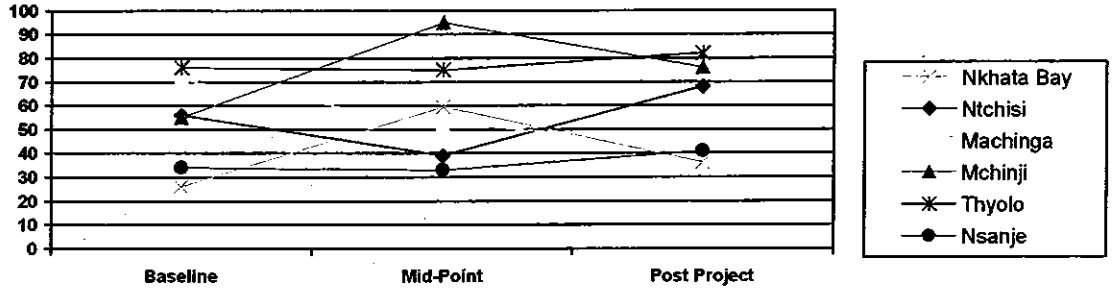


Figure 3-41: Performance of Form 3 Girls in Mathematics



Teachers' grades in form 3 mathematics demonstrated an improvement over baseline results except Machinga where the grades progressively fell from a baseline record of 75%, through a mid-point average of 52%, to a post project evaluation depression of 45%.

Figure 3-42: Teachers Results



As indicated above, both students and teachers were also tested in English as the case was with primary school pupils and teachers. In Table 3-8 below, information about the performance of both pupils and teachers has been presented.

Table 3-8: Form 3 English

District	Baseline			Midpoint			Post Project		
	Boys	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*	*Boys*	*Girls*	*Teachers*
Nkhata Bay	43	41	75	34	20	74	46	42	85
Ntchisi	35	32	70	35	29	57	35	28	93
Machinga	27	41	63	36	37	63	46	42	87
Mchinji	35	42	77	32	46	65	37	56	84
Thyolo	45	38	73	50	45	70	30	27	53
Nsanje	34	35	77	38	42	72	26	29	73

It can be noted from the table that form 3 students' performance in English at post project showed an improvement over baseline in Nkhata Bay, Machinga and Mchinji. There was however, a decline over baseline in Ntchisi, Thyolo and Nsanje. Girls out-performed boys throughout in Machinga, Mchinji and Nsanje districts while boys out-performed girls throughout in Nkhata Bay, Thyolo and Ntchisi districts.

It can also be noted from the table that teacher performance in English at post project showed an improvement over baseline and mid-point in Nkhata Bay, Ntchisi, Machinga and Mchinji districts. However, the performance of teachers at post project showed a decline over baseline and midpoint in Thyolo and Nsanje districts.

In Figures 3-43 and 3-44, information about the performance of form 3 boys and girls in English has been presented. It can be noted from Figure 3-43 that form boys' performance in English improved over baseline results in Nkhata Bay, Machinga and Mchinji districts. The performance of boys was constant in Ntchisi district at all the three evaluation stages. However, in Thyolo and Nsanje districts, the performance of boys declined at post project evaluation.

Figure 3-43: Performance of Form 3 Boys in English

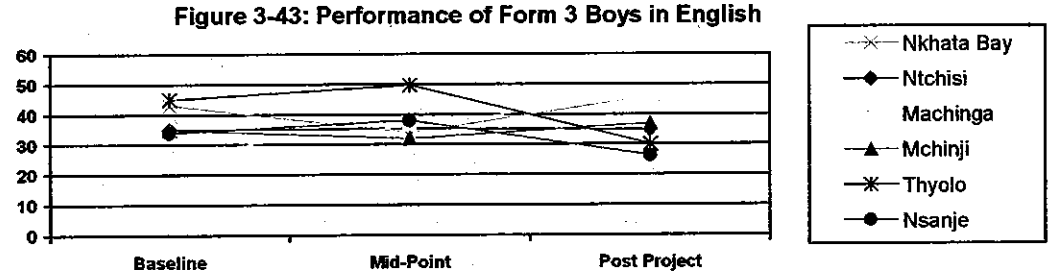
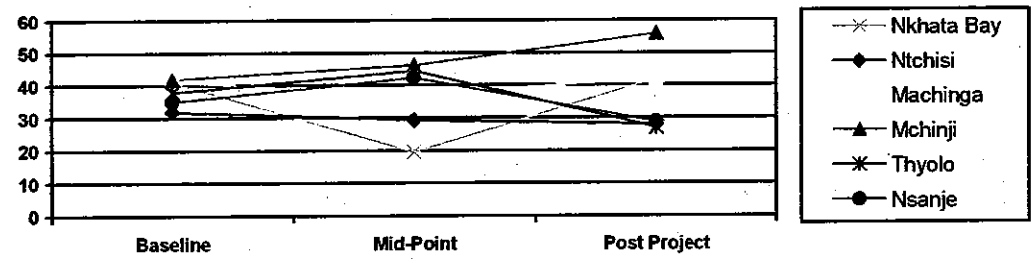


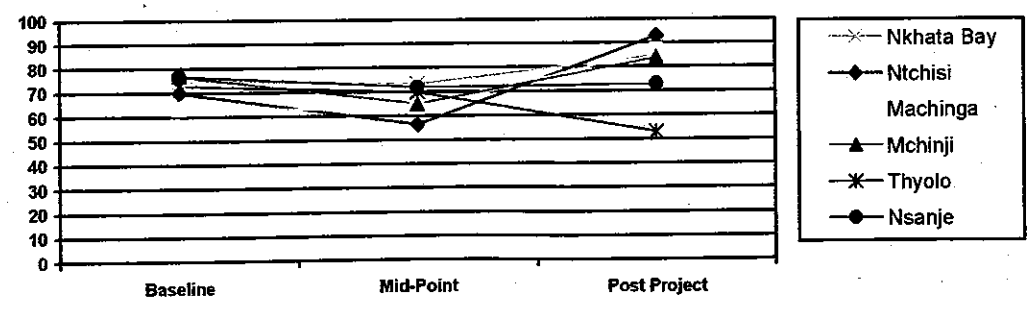
Figure 3-44: Perfomance of Form 3 Girls in English



It can also be noted from Figure 3-44 that girls' performance in form 3 English improved steadily over baseline results in Mchinji. Their performance at post project evaluation was the same as at baseline in both Nkhata Bay and Machinga, although both districts had a depression at mid-point. Performance of girls in Thyolo and Nsanje districts declined at post project evaluation compared to baseline although it was higher at mid-point.

Information about the performance of form 3 English teachers has been presented in Figure 3-45 below.

Figure 3-45: Teachers Results



It can be noted from the figure that from 3 English teachers' performance improved over baseline results in all districts except Thyolo. However, mid-point grades were generally low in all the districts but markedly improved in Ntchisi district.

3.3.6 Were there any differences in performance by district or project category?

In any analysis of test results, it is not sufficient just to highlight how much the students and teachers scored, it is also important to make an assessment of whether there were any significant differences in the performance of pupils by either district or the designated categories..

In order to examine whether there were any differences in the districts and categories, the team employed the services of the Analysis Of variance, (usually abbreviated as ANOVA). This is a method of testing the null hypothesis that several group means are equal in the population, by comparing the sample variance estimated from the group means to that estimated within the groups and that the difference we have found in the sample is simply due to sampling error. Here, the interest was whether there were any significant differences[2] by district or categories. The results of the analysis are presented in Tables 3-9 and 3-10.

Table 3-9: Analysis of Variance for District Means

		Sum of Squares	df	Mean Square	F	Sig.
Pupils Mean Score - English Standard 4	Between Groups	29469.419	5	5893.884	59.949	.000
	Within Groups	11502.809	117	98.315		
	Total	**40972.228**	**122**			
Pupils Mean Score - English Standard 6	Between Groups	17273.936	5	3454.787	10.312	.000
	Within Groups	38527.608	115	335.023		
	Total	**55801.545**	**120**			
Pupils Mean Score - Mathematics Standard 4	Between Groups	15190.689	5	3038.138	24.651	.000
	Within Groups	14419.903	117	123.247		
	Total	**29610.592**	**122**			
Pupils Mean Score - Mathematics Standard 6	Between Groups	5822.305	5	1164.461	19.220	.000
	Within Groups	6967.500	115	60.587		
	Total	**12789.806**	**120**			

The results show that by district, there were very significant differences in the performance of pupils in the four subjects. The significance was strongest in the performance of English in standard 4.

Table 3-10: Analysis of Variance for Category Means

		Sum of Squares	df	Mean Square	F	Sig.
Pupils Mean Score - English Standard 4	Between Groups	15257.163	5	3051.433	13.884	.000
	Within Groups	25715.065	117	219.787		
	Total	40972.228	122			
Pupils Mean Score - English Standard 6	Between Groups	21764.203	5	4352.841	14.707	.000
	Within Groups	34037.342	115	295.977		
	Total	55801.545	120			
Pupils Mean Score - Mathematics Standard 4	Between Groups	2671.314	5	534.263	2.320	.048
	Within Groups	26939.278	117	230.250		
	Total	29610.592	122			
Pupils Mean Score - Mathematics Standard 6	Between Groups	2727.908	5	545.582	6.236	.000
	Within Groups	10061.898	115	87.495		
	Total	12789.806	120			

[2] All significance testing was at 99.9% confidence level.

In terms the performance of pupils by category, it can be observed from the results of the analysis of variance that the most significant differences were in the performance of pupils in English standard 6 seconded by English standard 4. There were no major differences in the performance of pupils especially in mathematics standard 4.

When results of ANOVA are significant, it is desirable to go a step further to see which pairs of districts or categories performed significantly differently. This is done by using the independent sample Student t test. The following matrixes are the results of such an analysis.

Table 3-11: Significance of Means by District and Category

District	Nsanje	Thyolo	Mchinji	Nkhata Bay	Machinga	Ntchisi
Nsanje	——	English 4 Maths 6	Maths 4	Maths4 English 6	English 4	English 6
Thyolo		——	English 4 Maths 4 Maths 6	All subjects Significant	English 4 Maths 4 Maths 6	All subjects Significant
Mchinji			——	English 4	Maths 4	No major differences
Nkhata Bay				——	Englis4 Maths 4	No major differences
Machinga					——	English 4 English 6
Ntchisi						——
Categories						
Group	**1**	**2**	**3**	**4**	**5**	**6**
1	——	English 4 English 6 Maths6	No major differences	English 4	No major differences	No major differences
2		——	English 4 English 6 Maths 6	No major differences	English 4 English 6 Maths 6	All subjects Significant
3			——	No major differences	No major differences	No major differences
4				——	English 4 English 6	English 6 (weak)
5					——	No major differences
6						——

When the means of the districts are compared and tested for significance, it is noted that the mean performance of pupils from Thyolo districts were different from those from the other districts on the greatest number of counts (14). This is an indication that pupils from Thyolo district performed the least. The least number of differences were in Mchinji and Nsanje perhaps an indication that pupils in those districts performed better.

When the independent t tests results are examined by category, it is note that the performance of pupils in schools which were in category 3 (furniture and in-service) was not significantly different from all the other categories. One is inclined to interpret these results to mean that all other things being equal, the contribution of furniture and in-service to achievement surpasses that of the other interventions. The most striking feature arising from the ANOVA is that whether examined by district or category, the major differences in achievement among the pupils are found in English. The policy concern arising from these results is that there is need for improvements to be made in the way English is taught in the schools. Many studies (see CERT 2005) have pointed out the difficulties of teaching English with too many activities in one lesson. These results are consistent with the results of other studies (see SACMEQ studies) which have found that pupils' achievement in English was lower

than in maths and that the low achievement of pupils in English may affect their achievement in other subjects since English the medium of instruction

3.4 Summary and Conclusion

- In interpreting these results, it is important to note that one cannot squarely attribute any observed changes in schools to the JICA pilots. This is the nature if social science research and particularly so in the context of Malawi where a lot of donors are working within theeducation sector. However, it is possible to discern several points from the results of the quantitative analysis. It is obvious that the training and community mobilization have had positive impacts on the enrolment in schools and on levels of absenteeism as exemplified by reduced absence rates. The provision of desks in both primary and secondary schools has made life in the classroom a little bit better than before. All these point to the fact that small interventions can make a difference to schools.

- Positive impacts must be balanced against overall low level of resources in Malawi's schools. Free primary education demanded massive injection of resources into schools and this will take time, if ever, to be fulfilled. Currently, there are still more than 100 pupils to a permanent classroom, and many schools do not have safe drinking water. The provision of sanitary facilities like toilets needs to be improved and shortage of teachers' houses remains one of the major obstacles to achieving Education for All goals. All these translate into problems of inefficiency in the system. In Malawi, the development of sound and inclusive strategies to accelerate progress towards good quality education for all is urgently needed

- The most severely inadequate resource in the schools is the teachers. Teachers are lacking in Malawi schools both in quantity and quality. The declaration of free primary education also put pressure on the demand for secondary education. To address this, the Government of Malawi took a bold step by turning all Malawi College of Distance Education Centres (MCDEs) into Community Day Secondary Schools (CDSSs) and has also been constructing new secondary schools. However, as a stop gap measure, the best primary school teachers have been taken to occupy positions of secondary school teachers without training. Hence, this practice of taking away best teachers from primary school and putting them in secondary school has further weakened both primary and secondary sub-sectors. As a result, the quality of both primary and secondary education has been compromised.

- It is not possible to directly attribute any changes in performance of pupils to the interventions provided by the JICA projects. An appropriate design would have give room for controlling other types or sources of interventions offered to target schools. This could provide the potential for explaining any abnormal or unexpected results. For example, pupil achievement or indeed teacher performance may be positively affected by the activities of other donor interventions such as those of Malawi School Support Systems Programme (MSSSP), the Malawi Teacher Training Activity (MTTA), CRECCOM and the schools feeding initiative of the World Food Programme. It is possible that pupil performance could have been affected by other variables such as teachers' transfers.

  Recommendation. The impact evaluation for a project such as this one should be conducted after allowing a significant period of time for the effects of the interventions to take root and filter down to the primary target group (Pupils/ students) at the classroom level. How much time should be allowed, depends on the types of the project.

- It is obvious from the presentation made above on the performance of the pupils that the overall performance of the pupils in the sampled schools was very low. Of course not withstanding the problems of the timing of the test which might have caused the low performance, these results are indicative of the poor quality of schooling in both primary and secondary schools. Test validity may have been the problem. The performance of boys was higher than that of girls on many occasions. However, the fact that girls from Ludzi secondary school performed better than boys simply gives that message that quality matters in schooling. In all, the greatest impact of the intervention was positively apparent at the teacher level which could be indicative of the slow rate at which the effects of such interventions filter down to the leaner who is the primary target.

Recommendation. It is necessary to examine more closely at procedures and instrumentation for measuring student achievement in Malawi. This type of measure should focus on determining how much and what kind of learning is taking place in Malawi, preferably compared to measures in other countries, thus establishing a national standard. This is preferable to an external examination system that is used to promote, retain, graduate or accept students into new levels of schooling. The nature of the testing should be more authentic using real-world applications such as writing and speaking rather than relying on multiple choice examinations. The tests should be criterion-referenced so that specific areas of weakness among students can be assessed allowing planners to determine where emphasis should be placed in teaching. More national education systems are examining this approach to educational evaluation in order to determine the health of the educational system within the country. This is the direction taken by SACMEQ studies which should be encouraged.