

**AN INQUIRY INTO THE CONTINUOUS FALL IN THE PERCENTAGE OF
TRAINED TEACHERS IN PUBLIC BASIC SCHOOLS IMPLICATIONS FOR
LEARNING ACHIEMENTS.**

By

Ernest Otoo

THESIS

Submitted To
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

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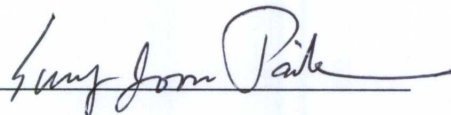
MASTER OF PUBLIC POLICY

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ABSTRACT

The quality of teachers is one important variable for influencing learning achievement of students. Hence the continuous fall in the percentage of trained teachers in public basic schools easily caught the attention of stakeholders in the education sector. Using a time series data on percentage of trained teachers and the percentage of students' cohorts qualifying to enter into senior high schools after the basic education programme in selected well-endowed and deprived districts; the analysis showed that: (i) well endowed districts exhibited relatively high performance in percentage of pupils gaining admissions into the senior high schools than those in deprived districts; (ii) well-endowed districts attracted and retained relatively more trained teachers due to the existence of social services and infrastructure; (iii) the three regions in the northern part of Ghana inhabit grater portion of the deprived districts and thus showed relatively worse performance in candidates qualifying for admission into senior high schools due to some extent by the existence of high levels of untrained teachers in the schools. The Education Strategic Plan 2003-2015 targeted to progressively increase the percentage of trained teachers to 95% in order to influence improvement in learning achievements through test scores.

DECLARATION

I hereby declare that except for the references to other people’s work which has been duly acknowledged, the work presented is the result of my own study conducted under the supervision of Prof. Kim Tae jong, Associate Dean, KDI School of Public Policy and Management, Seoul – South Korea. This work has neither in part or whole been presented anywhere for another degree

.....

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(Student)

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Date

Date

DEDICATION

This Work is dedicated to the glory of God.

ACKNOWLEDGEMENT

Thus far has the Lord brought me. He has not finished with me yet

I am grateful to my supervisor for his careful and critical supervision of this research work.

I am deeply indebted to KOICA and the Korean Government that fully sponsored this programme.

I am highly indebted to all whose prayer and support brought me this far and I would like to say a big thank you to all my Lecturers at the KDI School for their love and mentorship.

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CHAPTER ONE

1.1 Introduction

The quality of teachers is one important variable for influencing learning achievement of students. Hence the continuous fall in the percentage of trained teachers in public basic schools easily caught the attention of stakeholders in the education sector. Using a time series data on percentage of trained teachers and the percentage of students' cohorts qualifying to enter into senior high schools after the basic education programme in selected well-endowed and deprived districts; the analysis showed that: (i) well endowed districts exhibited relatively high performance in percentage of pupils gaining admissions into the senior high schools than those in deprived districts; (ii) well-endowed districts attracted and retained relatively more untrained teachers due to the existence of social services and infrastructure; (iii) the three regions in the northern part of Ghana accommodate a larger number of the deprived districts and thus showed relatively worse performance in candidates qualifying for admission into senior high schools due to some extent by the existence of high levels of untrained teachers in the schools. The Education Strategic Plan 2003-2015 targeted to progressively increase the percentage of trained teachers to 95% in order to influence improvement in learning achievements through test scores.

The 2010 Education Sector Performance Report (ESPR) and previous ESPRs showed that the percentage of trained teachers in the public basic schools for the past eight years has taken a reducing trend drifting gradually from the objective of reaching 95% by 2015. This issue became relevant as outcome indicators such as learning achievements primarily measured through test scores was not encouraging over a relatively substantial period of time. The percentage of pupils

obtaining aggregates 6-30¹ in the basic education certificate examination (BECE), over the period 2004 -2010 revolved around 62%². In order to ensure equity in performance irrespective of geographical location as enshrined in the Education Strategic Plan 2003-2015, this paper attempts to look at the performance of schools in the various districts vis-à-vis the growth in the percentage of trained teachers.

Quality outcome indicators over the period did not show encouraging performance in literacy and numeracy at the lower and upper primary levels³. The performance of students from selected well-endowed⁴ districts showed better performance than did the deprived districts. The average of the highest performance recorded in BECE for well-endowed districts was 78% with lowest of 45%. In the case of the Deprived Districts, the highest average was 55% and the lowest was 34% (see appendix table 5).

The Ministry absorbs about 30% of the national budget and close to 10% of National Gross Domestic Product. Besides, about 93% of the education budget is allocated to teacher development, training and salaries (Ministry of Education, 2010).

The Education Strategic Plan 2003-2015 targeted that the percentage of trained teachers shall be progressively increased to reach 95% for primary and Junior High Schools. This is expected to yield a corresponding gradual improvement in pupils learning achievement through test scores.

The time series data showed that the actual trajectory failed to live up to the expectations implied by the vision not only at the national level. The regional analysis showed a similar trend of a

¹ Grade to qualify for admission into Senior High School

² League Table of BECE Performance produced by the West Africa Examinations Council and submitted to the Ghana Education Service- Basic Education Division, over the period 2004 -2010

³ Report on 2009 Administration of National Education Assessment: Primary 3 & 6, English and mathematics

⁴ Category derived from the Pilot Programmatic Scheme (PPS) under the World Bank Education Sector Project (EdSeP)

continuous fall in the percentage of trained teachers with Upper East, Upper West and the Northern Regions that contain majority of the deprived districts recording relatively the lowest percentage trained teachers. In the same vain, these regions recorded the highest number of districts that performed poorly on the ranking of districts performance in the basic education certificate examinations. The data used for comparative regional analysis was collated through matched selection of well-endowed- and poorly-endowed districts from each of the 10 regions in the country. Data set analysed from the Basic Education Division, the Human Resources Division, the Teacher Education Division all of the of the Ghana Education Service (GES); and the Education Management Information System (EMIS) of the Ministry of Education informed the analysis and thus led to the following findings:

- The number of trained teachers increased in almost all regions, but the margin of increase was less than that for untrained teachers.
- Percentage of trained teachers in selected well endowed districts was relatively better than the case of selected deprived districts.
- The performance of pupils in the BECE from well-endowed districts was relatively better than those from the deprived districts.
- The concentration of relatively higher number of trained teachers in the selected well endowed districts was accompanied by relatively better performance in BECE than the case of the deprived districts that did relatively poorly with relatively less percentage of trained teachers.
- The number of trained teachers returning and reporting to the Ghana Education Service (Human Resource Directorate) following study leave decreased.

- There exist a number of trained teachers who vacate the system to either take further studies or seek employment elsewhere. Those who go for further studies without the approval of the GES (HRD) do not return to the school system. Of the numbers approved for study leave some do not report back to the GES-HRM to be posted back into the classroom.
- Although data did not cover the number of trained teachers found in management positions at the District, Regional and National level, discussions with the officers of the EMIS at the Ministry indicated that annual information relating to this category of teachers is collected. However, the software for data collation and analysis failed to include a slot for this group of teachers culminating in their inability to report on this indicator.
- It was therefore noted that about 80% of teachers in management positions at the various levels are trained teachers⁵.
- The National Service Scheme personnel, the personnel from the volunteer programme, of the NSS and the personnel from the National Youth and Employment Programme have turned out large numbers of pupil teachers annually to beef-up the teachers' corps. These were in response to the massive enrolment figures recorded in our basic schools as a result of interventions put in place to boost enrolment.

This study, therefore, recommends the following for consideration by all stakeholders:

⁵ Documented evidence from discussions with Data Analyst of the Education Management Information System.(EMIS)

- Review the policy of teacher education with respect to admission and funding to enable more trainees to enroll with emphasis for trainees from deprived areas.
- A revision of the study leave policy and a strategy to make the profession more rewarding to gradually eradicate the perception of trainees (in the CoE) considering teaching as *a means to an end*.⁶
- Ensure that a quota (to be determined) of trained and experienced teachers are in management and the rest posted to the classrooms where they are mostly needed.
- Speed up the decentralization process to give districts the mandate to manage staffing issues. This will ensure that they make adequate preparations in terms of facilities that will attract and retain trained staff in the classrooms of deprived areas.
- The EMIS software should be upgraded to include teachers in management positions at the District, Regional and Headquarters of the GES.
- The sector should direct attention to policies that will make life comfortable for trained teachers in the classrooms especially in the deprived areas. This will make the teaching service to be seen as a profession rather than a *'means-to-an-end.'*
- Considering the fact that the CoE are operating under capacity⁷ due to government financial constraints and commitments, there should be cost sharing as is happening in all tertiary institutions. A means of financing, like the Students' loan scheme could be used to support students in the CoE.
- In the light of this, the salary structure of teachers should be reconsidered to reward teachers who accept teaching appointments in the deprived areas.

⁶ Teacher attrition in Ghana 2009, Anonymous

⁷ Documented evidence from discussion with Deputy Director, Teacher Education Division

1.2 Background to the Study

The Basic Education system comprises a two-year kindergarten; six-year primary and a three-year junior high school education. Teachers are posted to these public institutions from the nation's 38 Teacher Training Colleges (TTC) now known as Colleges of Education (CoE).

The role of the teacher in quality education delivery in any economy cannot be over emphasized. The key element that defines the impact of schools on students' learning achievement is the quality of teachers, Hanushek (2010). Series of research papers focused on the importance of teachers for student achievement noted two key findings. First, teachers are very important; no other measured aspect of schools is nearly as important in determining student achievement. Second, that it has not been possible to identify any specific characteristics of teachers that are reliably related to student outcomes. (Hanushek 2010 p:3)

About 80 percent of children in Ghana are in the public basic education system (Education sector Performance Report, 2010). This is the area that successive governments have and still continue to support in the hope that teachers will be trained and retained in the classrooms to deliver efficient and quality teaching so as to improve pupils' achievement outcomes through better and improved test scores.

Ghana's education sector is facing many challenges including poor and inadequate infrastructure, insufficient financing and shortage of teachers especially in the rural areas. Within this spectrum of challenges, teacher shortage, which is largely associated with the low rate of teacher training and high level of teacher attrition, has been identified as one of the most intractable problems facing the education system in Ghana (Ministry of Education, 2010).

The education sector realizing the impact a professional teacher can make in the lives of pupils, initiated a policy to progressively increase the percentage of trained teachers in the public basic schools. This endeavour has been achieved through fully funded three year pre- service teacher training regular programme. The package also provides monthly financial allowance to trainees over the three year programme.

At the heart of education delivery is the teacher around whom every success or failure revolves. This makes the teacher the greatest asset of the education system. This dwindling trend in the percentage of trained teachers is at variance with the sector's policy target of ensuring a gradual increase in the percentage of trained teachers to impact learning achievements learning achievements. The test scores of pupils at the end of the basic education programme has stagnated around 62% for from 2004-2010. Having a large stock of trained teachers than is required at any time is important for sustained and improved students' test scores. One of the quality issues to improved and sustained test scores from schools in the United States can be attributed to the considerably more trained teachers' turnout than the demand for them over a very long period of time, Hanushek, 2010; Provasnik and Dorfman, 2005.

The influx of high numbers of untrained teachers known as pupil teachers became a necessary measure owing to the success of the government policy intervention of Free Compulsory Universal Basic Education (FCUBE) programme. The FCUBE resulted in high numbers of pupil enrolment and to address this issue was the recruitment of pupil teachers to augment the teachers' core. In the process of ensuring that enough teachers are trained annually to beef up the teachers' core in the classrooms, a number of interventions have been instituted. These can be categorized into two, namely:

- (i) Incentives packages that attract future or would-be teachers to enter the training colleges to be trained as teachers.
- (ii) Incentive packages that will retain teachers in the service upon graduation from the TTCs.

The former comprises the fully funded training of teachers from GoG budget and the provision of book allowance. The latter is the opportunity for further education at the tertiary level on study leave with salary.

There are three categories of untrained teachers in the public education system at the basic level. These are untrained teachers that have been in the classrooms, for a very long time ranging from fifteen to twenty years. This is the category that are mainstreamed and on the payroll of the Ghana Education Service. The National Service Scheme, annually posts personnel to the Ghana Education Service on a one year programme to add to the teachers' core in the schools. The Scheme as well dispatches another category known as the volunteers to the classrooms on a one year renewable contract. Finally, the National Youth Employment Programme dispatches a group of untrained teachers to the Ghana Education Service to support teaching and learning.

1.3 Problem Statement

The stagnated test scores of pupils at the end of the nine year basic education programme couples with discouraging performance in National Education Assessment⁸ of pupils in lower primary in literacy and numeracy for 2005, 2007 and 2009 academic years. In the light of the continued and increased government investments into education especially in the teacher training and

⁸ Report on 2009 Administration of National Education Assessment: Primary 3 & 6, English and mathematics. National Education Assessment assesses the competencies and proficiencies in literacy and numeracy for primary three and six for English and Mathematics.

remuneration, stakeholders at the 2010 National Sector Performance Review noted an inquiry into the dwindling trend in trained teachers learning achievement.

1.4 Objectives

This study seeks to achieve the following objectives:

- Present the current trend in the growth of trained teachers in the public basic schools.
- Assess the rate of loss of trained teachers in the public basic schools.
- Outline the contributing factors to the continuous fall in the percentage of trained teachers in public basic schools over the period 2001 to 2009.
- Propose recommendations for improving the numbers and quality of teachers in the public basic schools.

1.5 Significance of the Study

2 With over eighty percent of education sector budget going into the payment of teachers salaries and training, coupled with free three year residential Teacher Training in Diploma in Basic Education for about 9000⁹ teacher trainees annually funded from sector budget it is imperative to question why the consistent stagnation in pupil performance in quality outcome indicators. Also, about three thousand¹⁰ (3000) teachers trained in the classrooms annually receive study leave packages with salaries to vacate the classrooms for further studies on a three year programme. Studies in the United States and other areas showed that the quality of the teacher is currently, the most single important variable in determining pupil /student achievement (AFT, 2000 in World Bank, 2007).

⁹ Teacher Education Division, Ghana Education Service, 2010

¹⁰ Human Resource Division, Ghana Education Service, 2010

1.6 Scope of the Study

This data is confined to the public basic schools in Ghana. The public basic education system comprises two year kindergarten, six year primary schooling and a three year junior high school. Emphasis is also placed on the deprived and well endowed districts

1.7 Limitations

The study, has the following limitations:

- The data set on teachers focused only on teachers found in the classrooms during annual census.
- The data relating to teachers in management positions outside the schools and located at the District, Regional and National Offices of the Ghana Education Service is not considered. This was due to the inability of the EMIS database to capture and report on them. Hence credible data is not available.
- The assessment of the desired number of trained teachers captured did not include teachers annually going on retirement. This figure may include retiring untrained teachers in the classroom, trained and untrained teachers working in the district/regional and national offices. It may also include non teaching staff that is found on the GES payroll. Hence inclusion of this may widen the error term in our analysis.

- It is also unclear if all teachers that report to the GES (HRM) on return from study leave are all posted into the classrooms to augment the staff in the classrooms.

1.8 Organization of the Study

Chapter two of this paper reviews previous literary works relating to the topic. Focus is given to the trend of teachers both trained and untrained in the basic schools, rate of loss of teachers from the classrooms and the issues relating to trained and untrained teachers in the deprived as well as well-endowed districts. In chapter three, the paper shows the methodology for data collection and analysis and discussion of results taken care of in chapter four. The last chapter, presents the conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, I present review of past materials- research papers, journal writings and bulletins relating to the topic. The review follows the trend of loss qualified and experienced teachers in elementary and junior high schools.

2.2. Trend of trained and untrained teachers

Bame, 1972 noted that, in 1938, there were 3000 teachers in the Ghanaian elementary schools comprising 2,012 trained and 988 untrained; yielding approximately 67 percent of teachers to have been certified to teach. The implementation of the 1937 Education Committee's Report resulted in 3,989 certificated teachers in Ghanaian elementary schools and about 5000 untrained teachers by 1950, Bame, 1972. The implementation of the free compulsory universal education in the early 1960s overwhelmingly increased the demand of untrained teachers resulting in 54 percent certified teachers. Thus registering 12000 trained teachers against 10,000 untrained, Bame, 1972.

In a report of Voluntary Services Overseas, on valuing teachers concludes that "a potential crisis in the teaching profession threatens the ability of national government's to reach internationally agreed targets to expand and improve education. In many developing countries, the teaching force is demoralised and fractured" (VSO, 2002:1).

Lewin, (2002) noted that the teacher education system places a huge barrier on the numbers of teacher trainees to be admitted annually. Arguing that the pace of admission of teacher trainees

would have to be quadrupled in order to meet the increasing demands of pupil enrolment. Perry (2007) in a report on teacher demand and supply in Ghanaian public basic schools, noted that the basic education system of Ghana has over supply of teachers close to 17900 representing 13% of teachers in 2005. Going further, the report of showed that about 69% and 37% of districts are understaffed in primary and kindergarten respectively.

Akyeampong and Stephens (2002), in a study found that a good number of young men and women chose the teaching profession with the drive of vocational commitment, wanting to impact knowledge. To another group of young people, teaching was considered because it provides job security, attractive salaries and the opportunity to pursue further studies. Macdonald (1999), noted that the most qualified teachers who all things being equal may have acquired a good level of experience are most likely to leave the teaching service. These sets of people are more easily able to secure alternative employment. Hedges, (2002) in the same context found that in Ghana, unqualified teachers are more likely to have a stake in communities they work. This makes them more likely to stay in the service and thus contribute to the high and continuous rise in number of untrained teachers. Yet, another study in Zimbabwe, fond that unqualified teachers are more likely to leave the service than the trained ones possibly due to the short term nature of the contract for untrained teachers (World Bank, 1992).

2.3 Loss of Qualified and Experienced Teachers in the Public Basic Schools.

Guarino, Santibañez, Daley, & Brewer, (2004 p. 34), show that teachers with advanced degrees from prestigious colleges or teachers with degrees in “high market-value” subjects such as mathematics, engineering and science typically leave teaching for jobs in other, non-education

fields at higher rates than do their colleagues without these educational qualities. Some teachers leave fulltime classroom teaching either for jobs in unrelated fields or they leave the workforce all together. Ingersoll, (2001, 2003) indicated that some teachers can remain working as teachers, but “migrate” to other schools. It is also argued that others may still leave the classroom temporarily, perhaps to have children, and then return to the classroom (Murnane, Singer, Willett, Kemple *et al.*, 1991).

In 2009 a survey conducted on teacher attrition in Ghana interviewed teachers to find out the reason which might necessitate teachers to leave the profession. The analysis showed that the majority (90%) of the respondents intended to further their education. This is an indication that most teachers want to acquire higher knowledge which may have positive effects on the quality of education¹¹. However, it may also be an indication of the rate at which teachers want to leave the classroom (even if for a short period). In the light of this, teachers who pursue further education on full time basis are likely to stay out of the classroom for between two and five years depending on the course of study. Another factor leading to loss of trained teachers is retirement. This component of teacher attrition is less often stated as compared to ‘job dissatisfaction’ or ‘to pursue another job’ (Ingersoll, 2003). Williams (1998) noted research evidence that teacher attrition (i.e. individual decisions to leave the profession permanently) tend to be negatively related to age and positively related to intellectual capacity and educational attainment. Murnane (1987) suggests that some university graduates in the United States of America are attracted to teaching as a ‘medium-term’ occupation rather than a permanent career.

¹¹ Teacher attrition in Ghana 2009, Anonymous

2.4 Teacher Quality and Learning Achievement

What makes an effective teacher is an issue that still remains inconclusive. Hanushek, 2010, noted that, series of wide-ranging research meant to address this found little evidence to distinguish the effectiveness of teachers by levels of education and training,. Hanushek and Rivkin 2004, 2006, documented that teachers with master's degrees do not have consistent relationship with student learning achievement. Hanushek, 2010, reported that the amount of experience in the classroom – with the exception of the first few years – also bears no relationship to performance. Hanushek, 2010, noted that averagely, a teacher with five years experience is as effective as a teacher with 25 years of experience. Two studies comparing the impact of teaching with traditional teacher training on student achievement found little differences by teacher training background, (See Boyd et al. 2006 and Kane, Rockoff, and Staiger 2008)

2.5 Definition of Terms

2.5.1 Basic school: this comprises kindergarten, primary and junior high schools. The basic school involves two-year kindergarten education, six-year primary schooling and three year junior high school education.

2.5.2 Ghana Education Service: This is one of the eighteen Agencies of the Ministry of Education, responsible for implementing sector policies on pre-tertiary education delivery.

2.5.3 Choice for use of Deprived and Well- Endowed Districts

The use of deprived and well endowed districts is employed from the World Bank Pilot Programmatic Scheme (PPS) that categorized the districts of Ghana into the two categories through weighted average of ten educational access equity and quality indicators including (i) primary gross enrolment rate, (ii) gender parity index, (iii) percentage of trained teachers, (iv) pupil-textbook ratio, (v) pupil teacher ratio, (vi) pupil-seating/writing places ratio and (vii) percentage of schools with sanitary facilities.

2.5.4 Deprived districts: These are districts that fell below the threshold of ranking of districts by weighted average of educational access, equity and quality indicators.

2.5.5 Well endowed districts: these are the list of districts that performed better and above the threshold set for well endowed districts. This means, these districts' weighted average of the indicators mentioned in the deprived districts definition was found to be satisfactory.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the approaches and procedures employed for the research in order to achieve the objectives of the study. This refers to the source of data sampling technique and method of analysis.

3.2 Methodology

This study relied on secondary data from the annual school census report (2001-2009) the Human Resources Division of the Ghana Education Service. It also involved discussions with the Director of Human Resources Division and the Assistant Director, Teacher Education, all of the Ghana Education Service. Discussions with senior data analysts of the Education Management Information System (EMIS) also took place. Below is the summary of steps:

- 1) Time series data collated at the national level for the period 2001-2009 using EMIS database.
- 2) Similar exercise was conducted for the regions to assess disparities and similarities in the trend recorded at the national level.
- 3) Stratified and random sampling tools was employed to select the well endowed and deprived districts from list of already defined deprived and well endowed districts under the Pilot Programmatic Scheme (PPS) Programme under the World Bank Capacity Building Programme in education ,through the following:

- (i) The regions were listed in alphabetical order alongside their respective districts; (with list of deprived and well endowed districts matched against the regions in same order.
 - (ii) Following the alphabetical order, the first derived and well endowed district of each region was selected.
 - (iii) Where a district selected (has been split into two districts) during the period of study, it is omitted and the next in order is selected.
 - (iv) There are ten selected well endowed districts and nine deprived. This is due to Greater Accra Region having no deprived district.
- 4) Using the number of trained teachers (in the classroom) found in the EMIS database for 2000, the study added the annual cumulative net values (newly trained plus number returning from study leave and deducted number approved for study leave) to determine the desired number of trained teachers expected in the classrooms.

3.3 Source of Data

The main source of data used for this study was derived from the Ministry of Education-Education Management information System (EMIS) Database. The Ministry's database is maintained in the Education Management Information System (EMIS) the EMIS provides performance indicative targets that have being achieved on a yearly basis through the annual school census. Also, the issues for the annual sector performance review are captured in the Annual Education Sector Performance Report. The Education Sector Performance Report (ESPR) is the sector performance document that details the performance of the education

delivery in attaining sector objectives set in the Education Strategic Plan and other international commitments such as the Millennium Development Goals (MDGs) and the Education For All (EFA) Goals.

Documented evidence from discussions with the Director of Human Resources at the Ghana Education Service and the Director in charge of Teacher Education at the pre-tertiary level.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides the analyzed results from the data set obtained from the EMIS, the documented evidence.

4.2 Results and Discussions

Teachers who are posted to areas that have critical challenges in terms of ethnic tensions, areas without the basic infrastructure such as water, electricity and accessible roads tend to vacate the post sooner than is expected. This description characterizes many deprived districts.

The Ghana Education Service has a policy directive to give teachers the opportunity to pursue further studies on study leave after teaching in deprived areas of the country for three years. Teachers that get posted to other areas are qualified to apply for study leave with salary after five years¹². Hence, about 60 percent of a cohort of trained teachers vacates the classrooms to pursue further studies in three to five years.

Information gathered in this paper relates to teachers that participated in the school census in various years. The data derived from the annual census reports of the Education Management Information System (EMIS) over the period 2001-2002 through to 2008-09. Again this data covers only teachers in the classrooms of the public basic schools: i.e. kindergarten, primary and junior high school. The development of the Education Strategic Plan 2003-2015 used the targets achieved in 2001 as the base line upon which projections and extrapolations were made. The 2000-01 school census indicated 29%, 77% and 88% of teachers were respectively trained for

¹² Documented Evidence from discussions with Director, Teacher Education Division. Ghana Education Service

kindergarten, primary and junior high schools in the public domain. Against these levels of achievement, the ESP 2003-15 projected that percentage of trained teachers at those levels shall increase progressively to 95% by 2015. This is meant to translate to a progressive improvement in learning achievements via improved test scores in basic education certificate examination.

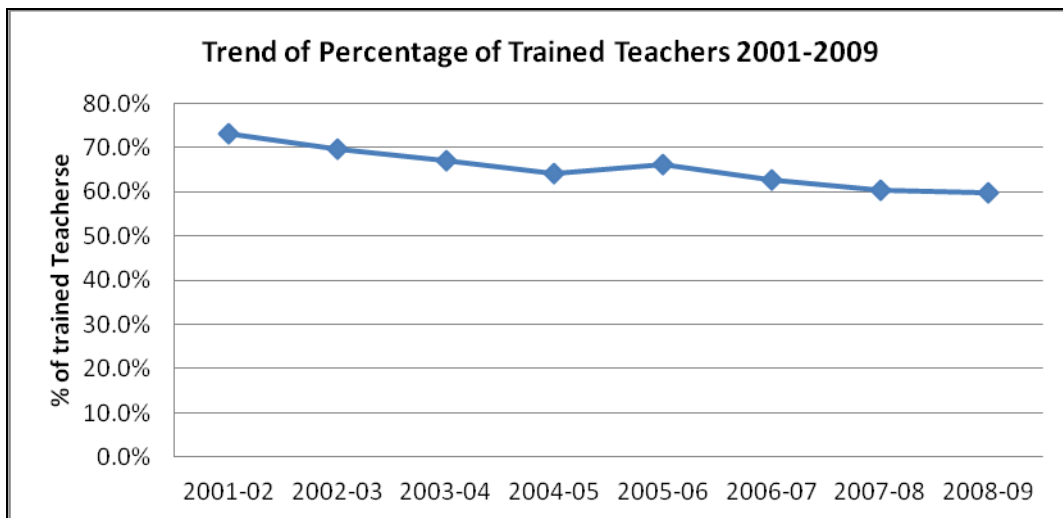
A large number of unqualified teachers, about 71,814 in 2008-09, were teaching in Ghanaian public basic schools (Ministry of Education, 2009 cited in 2008-09 annual census report). These include (i) new graduates doing one year's national service (ii) a set of young and sometimes older, people teaching as volunteers under the National Volunteer Scheme and (iii) about 9,000 students in the final year in teachers colleges teaching full-time in schools as part of their training course and (iv) staff from the National Youth and Employment Programme. The number of untrained teachers in the public basic school system has grown from 33,169 in 2001-02 academic year to 71814 by 2008-09. This represents about 116 percent increase over the period.

Teacher trainees annually graduate from the nation's 38 Colleges of Education and posted to the classrooms to beef up the trained teachers' corps. In addition, in-service training programmes such as the Untrained Teachers' Diploma In Basic Education (UTDBE) that promote untrained teachers to the level of trained teachers imbue trainees with requisite skills that qualify them to join the hub of trained teachers. The Ministry hopes to improve the quality of teacher situation and improve the test scores of pupils.

Analysis of the trend showed that though the percentage of trained teachers in public basic schools appeared to assume a downward slope (figure 1), the absolute figures in the number of trained teachers seem to increase gradually indicating an upward but flatter slope. Figure 2

showed that the percentage of trained teachers over the period gradually decline whilst that of untrained teachers assumed an upward trend, indicating the high influx of untrained teachers in to the classrooms. The expected gradual increase in the percentage of trained teachers is meant to impact learning achievement of pupils. Hanushek, 2010 noted that the probable best indicator for influencing learning achievement is the quality of teachers. In the light of the gradual decline in the percentage of trained teachers, the percentage of pupils qualifying to enter senior high schools after the basic education programme has stagnated around 62%¹³. (see appendix table 5)

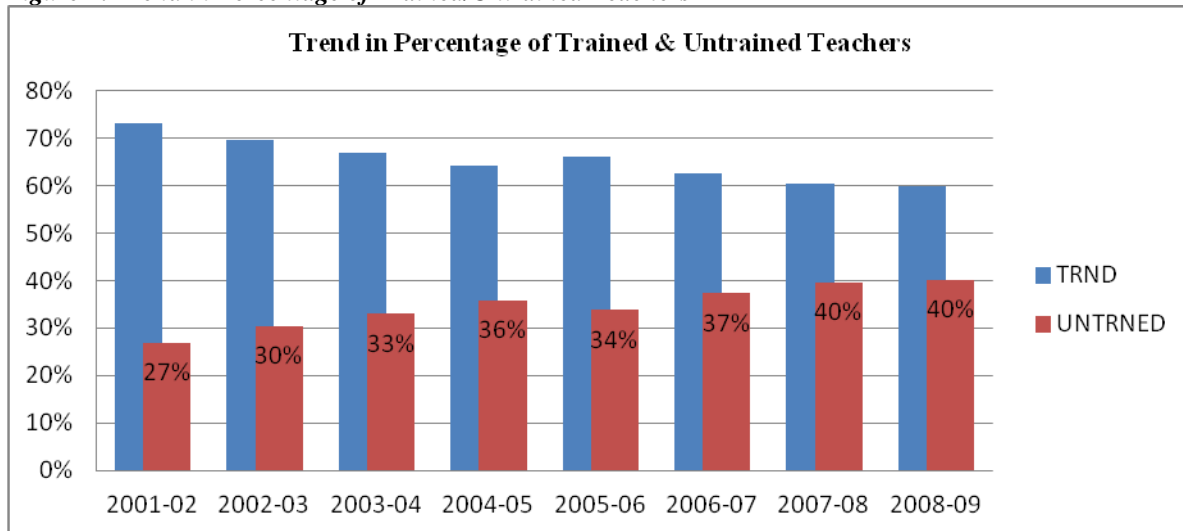
Figure 1: Trend of Percentage of trained teachers 2001-2009



Source: Ministry of Education: EMIS 2001-2009 (this is the combination of teachers in kindergarten, primary and junior high schools, known in Ghana as basic schools)

¹³ League Table of BECE Performance produced by the West Africa Examinations Council and submitted to the Ghana Education Service- Basic Education Division, over the period 2004 -2010

Figure 2: Trend in Percentage of Trained/Untrained Teachers



Source: Ministry of Education: EMIS 2001-2009 (the influx of high levels of untrained teachers is shrinking the percentage of trained teachers)

4.3 Trained and Untrained Teachers in Deprived and Well- Endowed Districts

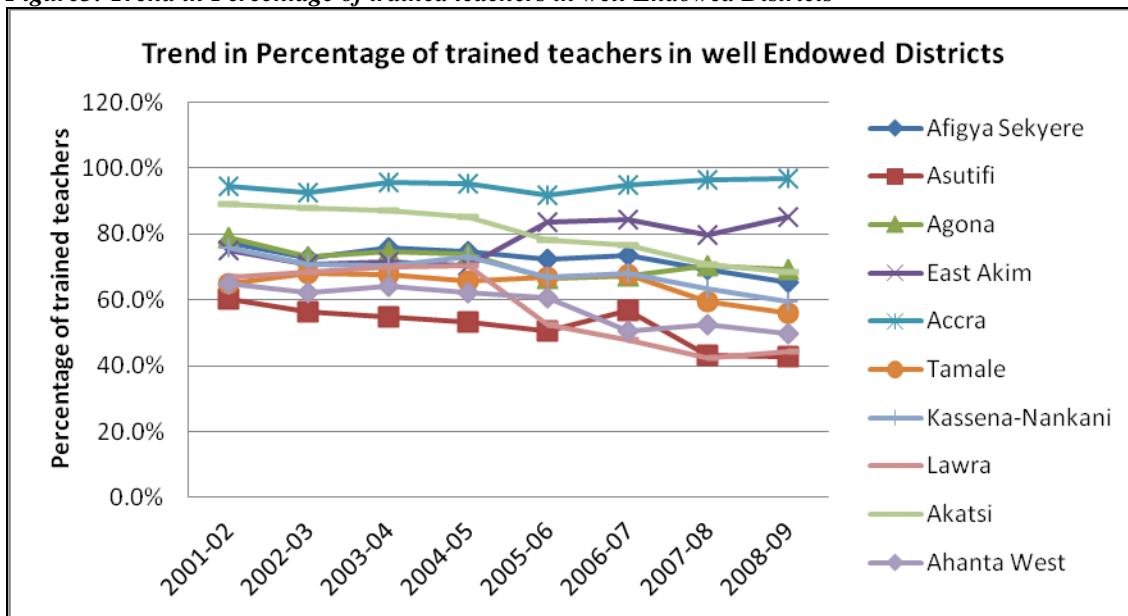
The percentage of trained teachers took the same dwindling trend in the well endowed districts with the exception of Accra that appeared to have a rate which remains almost the same throughout the period. Agona recorded a much steeper curve indicating that the rate of drop in the percentage of trained teachers was significant as compared to the rest. The case of the selected deprived districts also showed a similar trend except for the evidence of a steeper downward trend than the case of non-deprived districts reflecting the high influx of untrained teachers.

The basic education certificate examination taken at the end of the basic education programme showed surprising trends in the case of deprived and well endowed districts. For the selected deprived and well-endowed districts, the average of percentage of students qualifying for admission (thus obtaining aggregates 6-30), showed better performance for pupils in well-endowed districts than the case of deprived districts. Accra Metro recorded the highest average over the period and the lowest of 45 percent recorded by both Ahanta West and Gona Districts

under the selected well-endowed districts. The case of deprived districts showed the highest average of percentage of students qualifying for senior high school admission of 55 percent and lowest of 34 percent for Bole and Ahafo Ano South Districts respectively. (see appendix, table 5)

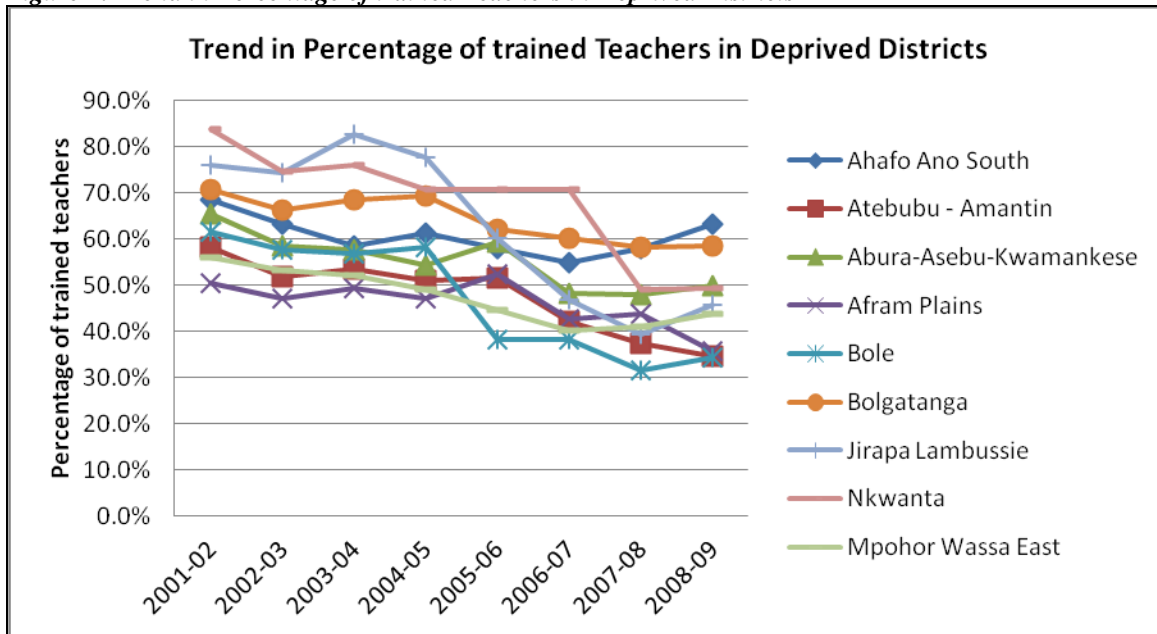
The deprived districts attracted relatively lower numbers of trained female teachers. This can be attributed to the collected evidence of inadequate social amenities and the fear of not having desired husbands in those areas. The well endowed districts attracts larger number of the trained females teachers which have implications on building female role models in the deprived areas as efforts are geared towards objectives of the affirmative action.

Figure3: Trend in Percentage of trained teachers in well Endowed Districts



Source: Ministry of Education: EMIS 2000-2009

Figure 4: Trend in Percentage of trained Teachers in Deprived Districts



Source: Ministry of Education: EMIS 2000-2009

4.4 BECE Performance of Well-Endowed and Deprived Districts

For the period 2004 -2011, the number of candidates in a cohort of junior high schools taking the BECE for the selected deprived and well endowed districts showed a trend that is not conclusive enough to establish the correlation between percentage of trained teachers and learning achievement. Reflecting on the trend of percentage of trained teachers and the percentage of pupils qualifying to enter into senior high school in the well endowed districts and comparing it with the trend in the deprived districts, it is not far fetch to say that to some degree, the existence of relatively high percentage of trained teachers has made some impact on the performance of pupils. The higher the percentage of trained teachers, the better the expectation of improved test scores. Hanushek, 2010 noted that the teacher quality has greater influence on learning achievement compared to other indicators. In the same way that the three regions in the northern part of Ghana, namely Northern, Upper East and Upper West regions had the highest number of untrained teachers resulting in relatively steeper curve of percentage of trained teachers over the

period 2001-2009, the same three regions contained the highest number of districts ranking at the bottom on the league table of district performance in basic education certificate examination (BECE). In 2008, fourteen out of twenty schools that ranked at the bottom on the league table of district performance in BECE¹⁴ came from the three northern regions. In 2009 and 2010, thirteen out of twenty districts ranked with the least performance in BECE came from the three northern regions.

4.5 Trained and Untrained Teachers' Distribution in Public Basic Schools

Teachers trained from the Nation's colleges of education are posted to the Headquarters of the Ghana Education Service (GES). The GES in turn posts the teachers to the Regions based on vacancy list and requests submitted by the schools through the districts and regional offices. When these teachers are posted to the schools finally, it's the duty of the head teacher to allocate to the classes. The paper found that, head teachers place high premium on upper classes and therefore would send trained to upper classes and finds it comfortable to retain the untrained teachers at the lower classes. It is therefore not surprising that the kindergarten over the period showed relatively lowest percentage of trained teachers compared to primary and junior high level. The 2001-02 school census showed 19,043 teachers in the nation's public KGs with 5531 (29%) trained. Thus about two-thirds of the teachers remained untrained. Over the seven year period of this review the percentage of trained teachers increased to only 31%- thus only 2 percentage points. On the other hand, the untrained teachers' percentage reduced by same two percentage points from 71% in 2001-02 to 69% in 2008-09. Here it can be realized that, the percentage of trained teachers rose steadily from 2001-02 through to 2003-04, but then, fell to

¹⁴ League Table developed by the West African Examinations Council and submitted to the Ghana Education Service- Basic Education Division. This league table of district performance in BECE is annually published in the daily News Papers- the Daily Graphic.

29% in 2004-05 from 32% in 2003-04. However, it rose again to 36% in 2006-07 and stagnated at 31% for 2007-08 and 2008-09 academic years. (see annex table 7)

The Primary level showed a steady fall in the percentage of trained teachers from 77% in 2001-02 to 58% in 2008-09 indicating an annual growth reduction of 2.7%. The absolute number of trained teachers fluctuates but assumes a downward trend, which contradicts the policy of progressively increasing the numbers and percentages of trained teachers. The untrained teacher's core on the other hand increased steadily from 23% in 2001-02 to 42% in 2008-09. (See appendix, table 8)

At the junior high level the trend was no different from that of the primary level. Again the percentage of trained teachers dropped gradually from 88% in 2001-02 to 77% in 2008-09. Meanwhile, the number of trained teachers increased gradually over the period despite the intermittent drops in the number. On the other hand the percentage of untrained teachers shot up from 12% in 2001-02 to 23% in 2008-09. Table 4 shows the details in terms of total, trained and untrained. See appendix, table 9).

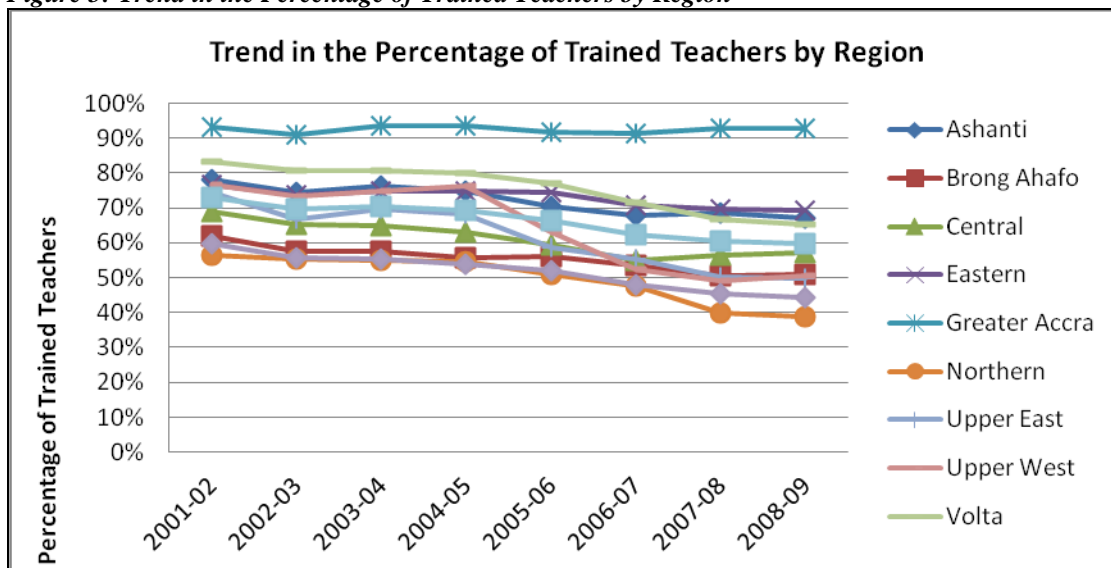
The majority of the trained teachers, especially female trained teachers are concentrated in the municipalities and regional capitals where the well endowed districts are located. Hence, a greater number of the trained teachers in kindergarten, primary and junior high levels are concentrated in the well endowed districts. Trained teachers after serving in the deprived areas seek for opportunities to relocate to the municipals and regional capitals creating vacancies to be filled by untrained teachers. Trained teachers even they decide to leave the public education

system have greater potential of securing teaching appointments with private schools most of whom are concentrated in the cities and municipalities.

4.6 Trend in Trained and Untrained Teachers by Region

All regions in the country recorded gradual increases in the number of untrained teachers. Interestingly, the slope for the regions became steeper from the 2005-06 academic year to 2008-09. This is the period of the implementation of the capitation grant that made the schools to record massive increases in enrolment. These huge increases in pupil numbers called for immediate solutions to employ teachers into the classrooms. Therefore recruiting of pupil teachers to attend to the pupils was the immediate solution. The Northern, Upper East and Upper West regions having the highest concentration of deprived districts, recorded the top three steep slopes (see figure 5). The steeper the slope, the higher the concentration of untrained teachers.

Figure 5: Trend in the Percentage of Trained Teachers by Region



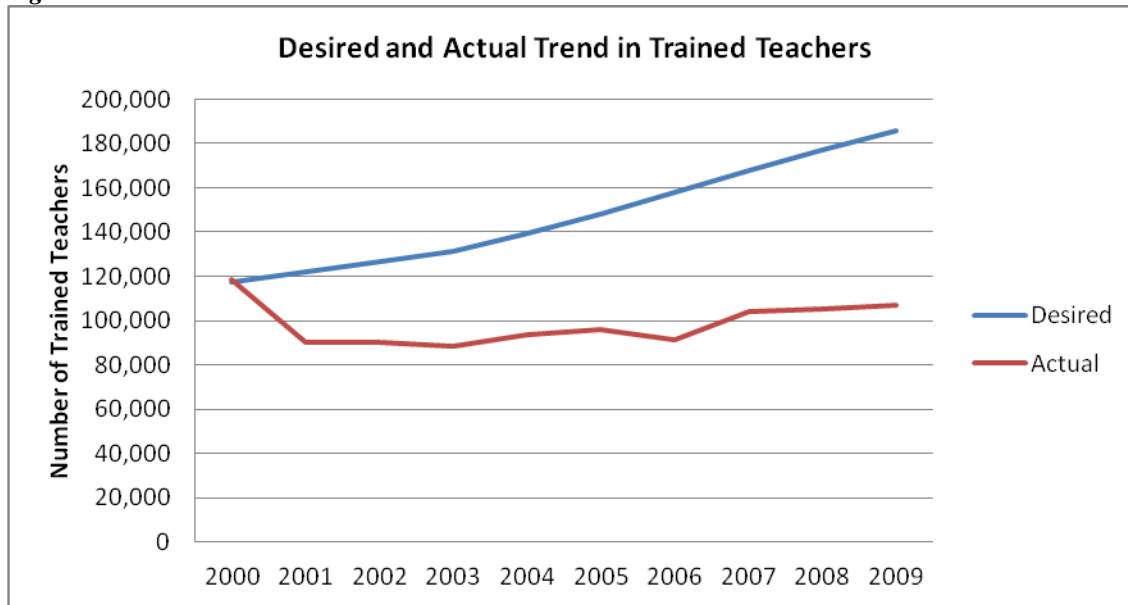
Source: Ministry of Education: EMIS 2000-2009(Ghana is divided into ten regions, which are further divided into Districts. The Upper East, Upper West and the Northern Regions contain majority of the districts that are described as deprived and hence have large numbers of untrained teachers.

4.7 Estimation of Desired (Expected) Teachers in the Classrooms to the Actual

This is where the study attempts to estimate the number of trained teachers expected to be in the classrooms. The paper uses data from the Ghana Education Service- Human Resource Division and the Teacher Education Division for the number of newly trained teachers annually graduating from the CoE. Besides, the number of teachers returning from study leave and the number of students annually approved for study leave was considered. This analysis is based on the assumption that newly trained teachers from the CoE and the teachers returning from study leave are posted to the classrooms to augment the number of trained teachers. The number of teachers approved for study leave is then deducted to arrive at the net of teachers expected to be in the classroom. The cumulative number of teachers annually then denotes the expected growth in trained teachers. This is then measured against the actual number of trained teachers recoded annually as shown in table 3. Figure 6, therefore gives the graphic trend in the expected growth in trained teachers in the classroom against the actual.

The gap between the desired trend and actual trend denotes the number of teachers that are lost in the classrooms of the basic schools. Some of these teachers are posted to the regional district and head quarters of the GES. Other get posted to teach in the senior high schools and others leave schools to seek jobs in other sectors of the economy.

Figure 6: Desired & Actual Growth in Trained Teachers



Source: Ministry of Education: EMIS 2000-2009 (the desired growth in the number of teachers is based on the assumption that all teachers graduating from the colleges of education and other trained teachers returning from study leave are posted to the schools to teach).

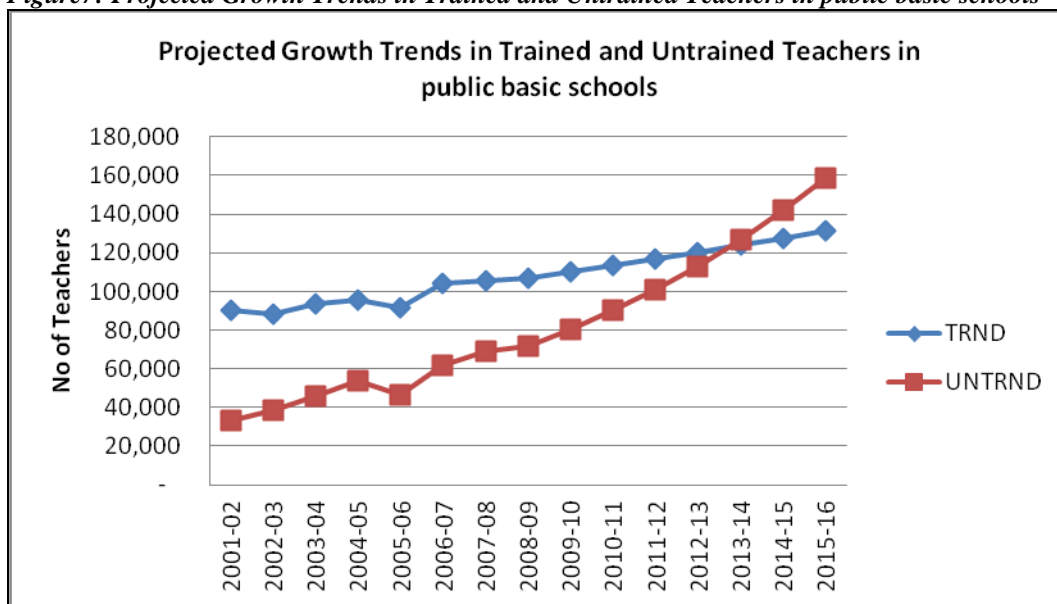
4.8 Expected Growth in percentage of trained teachers by 2015.

The Ministry’s policy of progressively increasing the percentage of trained teachers to 95% in the basic schools by 2015 will be unattainable if the trend of growth in the numbers of both trained and untrained teachers in the classrooms remains unchecked. The past trend for the period 2001-2009 showed that averagely trained teachers (in the classrooms) recorded an annual growth of 3% whilst the growth in untrained teachers showed 12% annual growth over the period 2001-2009. By extrapolation, the projected growth rate in trained and untrained teachers into 2015 yielded results that are at variance with the policy to progressively increase the percentage of trained teachers in the public basic schools. Schools in deprived areas will continue to suffer if measures are not put in place to remedy the situation. Figures 7 and 8 show the projected growth in the number of trained teachers and untrained teachers based on the growth rate of 3% and 12% for trained and untrained teachers in the public basic schools

respectively recorded for the period 2001-2009. From figure 7, it is shown that if the trend is allowed to continue without recourse to policy decisions, the number of untrained teachers will rise steadily to equal the number of trained by 2013. This will always be at the disadvantage of deprived districts which will continue to lose trained teachers and consequently worsening learning achievements. This situation thus makes the attainment of 95 percent of trained teachers in the public basic schools a mirage. Hence figure 8, explains that by 2013 the growth in the percentage of trained and untrained teachers will converge at 50% to the detriment of schools in the deprived areas.

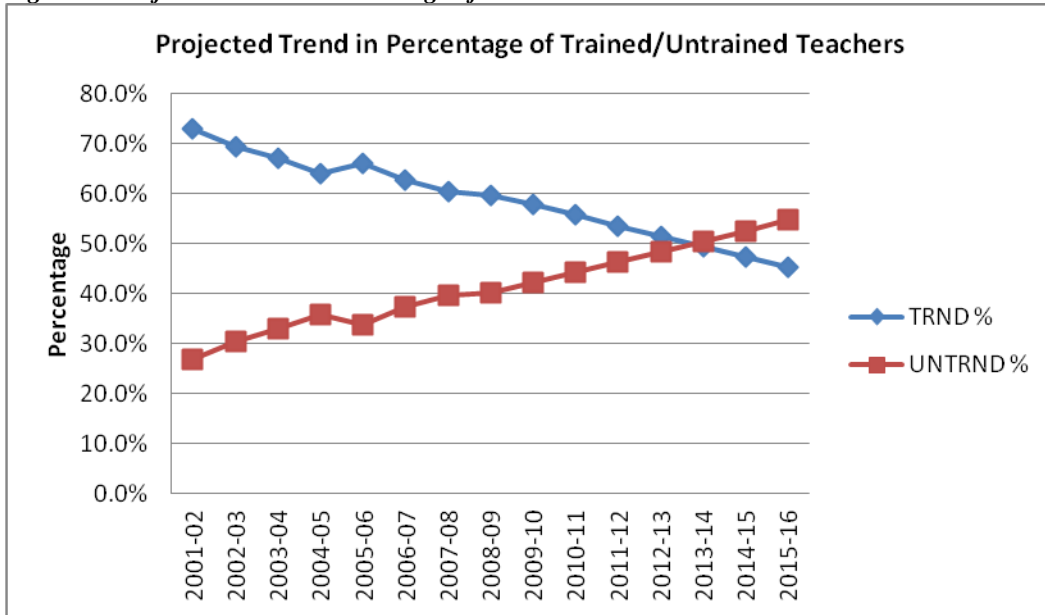
Considering the internal efficiency of the system, it invariably means that study leave generally is considered an incentive for would be teachers to enter Colleges of Education as a rewarding package to pursue further studies and then leave the education system rather than to upgrade pedagogical skills in basic education. (Hedges 2002: Mereku, 2002).

Figure7: Projected Growth Trends in Trained and Untrained Teachers in public basic schools



Source: Ministry of Education: EMIS 2000-2009; performance in 2001-2009 is obtained from EMIS; 2010-2015 of the table is extrapolated from average annual performance over the past period from 2001 to 2009 and based on Researcher's estimation.

Figure 8: Projected Trend in Percentage of Trained/Untrained Teachers



Source: Ministry of Education: EMIS 2000-2009; performance in 2001-2009 is obtained from EMIS; 2010-2015 of the table is extrapolated from average annual performance over the past period from 2001 to 2009 and based on Researcher’s estimation¹⁵.

¹⁵ This is the expected results by 2015 if the current trend is allowed to continue with a policy shift

CHAPTER FIVE

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is the final chapter and provides a summary of the findings of this paper, conclusions and key recommendations for improving teacher training, management and deployment to address equitable distribution of trained teachers and provide schools in deprived districts opportunities to attract and retain trained teachers to improve pupil learning achievement.

5.2 Summary of findings

- The number of trained teachers increased in almost all regions, but the margin of increase was less than that for untrained teachers.
- Percentage of trained teachers in selected well endowed districts was relatively better than the case of selected deprived districts.
- The performance of pupils in the BECE from well-endowed districts was relatively better than those from the deprived districts.
- The concentration of relatively higher number of trained teachers in the selected well endowed districts was accompanied by relatively better performance in BECE than the case of the deprived districts that did relatively poor with relatively less percentage of trained teachers.
- The number of trained teachers returning and reporting to the Ghana Education Service (Human Resource Directorate) following study leave decreased.
- There exist a number of trained teachers who vacate the system to either take further studies or seek employment elsewhere. Those who go for further studies without the approval of the GES (HRD) do not return to the school system. Of the numbers approved

for study leave some do not report back to the GES-HRM to be posted back into the classroom.

- Although data did not cover the number of trained teachers found in management positions at the District, Regional and National level, discussions with the officers of the EMIS at the Ministry indicated that annual information relating to this category of teachers is collected. However, the software for data collation and analysis failed to include a slot for this group of teachers culminating in their inability to report on this indicator.
- It was therefore noted that about 80% of teachers in management positions at the various levels are trained teachers¹⁶.
- The National Service Scheme personnel, the personnel from the volunteer programme, of the NSS and the personnel from the National Youth and Employment Programme have turned out large numbers of pupil teachers annually to beef-up the teachers' corps. These were in response to the massive enrolment figures recorded in our basic schools as a result of interventions put in place to boost enrolment.

5.3 Conclusions

Conclusively, the paper notes that a lot of components make contributions into improving students' learning achievements. These include the availability of adequate teaching and learning materials such as text books, the class size, the socio-economic status of parents of the students, and the classroom conditions /arrangements. However, a well qualified teacher will be able to deliver effective lessons with little teaching and learning materials than an untrained teacher with

¹⁶ Documented evidence from discussions with Data Analyst of the Education Management Information System.(EMIS)

all the teaching and learning materials and in a conducive environment. Hence, the concentration of relatively higher number of trained teachers in the selected well endowed districts was accompanied by relatively better performance in BECE than the case of the deprived districts that did relatively poor with relatively less percentage of trained teachers. In the light of this, the paper makes the following recommendations.

5.4 Recommendations

- Review the policy of teacher education with respect to admission and funding to enable more trainees to enroll with emphasis for trainees from deprived areas.
- A revision of the study leave policy and a strategy to make the profession more rewarding to gradually eradicate the perception of trainees (in the CoE) considering teaching as *a means to an end*.¹⁷
- Ensure that a quota (to be determined) of trained and experienced teachers are in management and the rest posted to the classrooms where they are mostly needed.
- Speed up the decentralization process to give districts the mandate to manage staffing issues. This will ensure that they make adequate preparations in terms of facilities that will attract and retain trained staff in the classrooms of deprived areas.
- The EMIS software should be upgraded to include teachers in management positions at the District, Regional and Headquarters of the GES.
- The sector should direct attention to policies that will make life comfortable for trained teachers in the classrooms especially in the deprived areas. This will make the teaching service to be seen as a profession rather than a *'means-to-an-end.'*

¹⁷ Teacher attrition in Ghana 2009, Anonymous

- Considering the fact that the CoE are operating under capacity¹⁸ due to government financial constraints and commitments, there should be cost sharing as is happening in all tertiary institutions. A means of financing, like the Students' loan scheme could be use to support students in the CoE.
- In the light of this, the salary structure of teachers should be reconsidered to reward teachers who accept teaching appointments in the deprived areas.

¹⁸ Documented evidence from discussion with Deputy Director, Teacher Education Division

APPENDICES

Well Endowed Districts	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Average
Afigya Sekyere	77%	73%	76%	75%	72%	73%	69%	65%	67%	72%
Asutifi	60%	56%	55%	53%	51%	57%	43%	43%	44%	51%
Agona	79%	73%	75%	74%	66%	67%	71%	69%	67%	71%
East Akim	75%	71%	72%	70%	84%	84%	80%	85%	83%	78%
Accra	94%	92%	96%	95%	92%	95%	96%	97%	95%	95%
Tamale	65%	68%	68%	66%	67%	68%	59%	56%	54%	63%
Kassena-Nanakani	76%	71%	70%	73%	67%	68%	63%	60%	58%	67%
Lawra	67%	69%	70%	70%	52%	48%	42%	44%	44%	56%
Akatsi	89%	88%	87%	85%	78%	76%	71%	68%	62%	78%
Ahanta West	65%	62%	64%	62%	61%	51%	53%	50%	48%	57%
Deprived Districts	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Average
Ahafo Ano South	68%	63%	58%	61%	58%	55%	58%	63%	66%	79%
atebubu-Amantin	58%	52%	54%	51%	51%	42%	37%	35%	36%	59%
Abura-Asebu-Kwamankese	65%	59%	58%	54%	59%	48%	48%	50%	47%	70%
Bole	61%	58%	57%	58%	38%	38%	32%	34%	35%	59%
Bolgatanga	71%	66%	68%	69%	62%	60%	58%	58%	58%	82%
Jirapa Lambussie	76%	74%	83%	78%	60%	47%	39%	46%	43%	78%
Nkwanta	84%	74%	76%	71%	71%	71%	49%	49%	47%	85%
Mpohor-Wassa East	56%	53%	52%	49%	45%	40%	41%	44%	46%	61%
Afram Plains	50%	47%	49%	47%	52%	43%	44%	36%	28%	57%

Source: Ministry of Education: EMIS 2000-2009

Table 2: Trend In Percentage Of Male/Female Trained Teachers In Basic Schools

Details	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Total Teachers	123,251	127,180	139,459	149,255	138,410	166,337	174,388	178,651
Male	73646	75429	77428	80663	81052	99570	104585	105285
Female	49605	51751	62031	68592	57358	66767	69803	73366
Male Trained	55286	52768	54491	55868	52944	59759	59972	59937
Female Trained	34796	35692	39024	39831	38653	44557	45402	46900
% Male Trained	75%	70%	70%	69%	65%	60%	57%	57%
% Female Trained	70%	69%	63%	58%	67%	67%	65%	64%

Source: Ministry of Education: EMIS 2000-2009

Table 3: Estimation Of Expected No. Teachers In The Classrooms To The Actual

YEAR	NEWLY TRAINED (A)	TEACHERS RETURNING FROM STUDY LEAVE (B)	TEACHERS APPROVED FOR STUDY LEAVE (C)	NET ANNUAL No. EXPECTED IN THE CLASSROOM (A+B-C)	NET CUMMULATIVE (DESIRED)	ACTUAL No. IN THE CLASSROOMS	DIFF
2000 b/f					118,283		
2000	6,596	2,527	10,103	(980)	117,303	118,283	(980)
2001	6,285	4,602	6,247	4,640	121,943	90,082	31,861
2002	6,834	2,888	5,000	4,722	126,665	90,082	36,583
2003	4,613	4,870	5,000	4,483	131,148	88,460	42,688
2004	7,066	4,233	3,000	8,299	139,447	93,515	45,932
2005	7,482	4,200	3,000	8,682	148,129	95,699	52,430
2006	8,258	4,553	3,000	9,811	157,940	91,597	66,343
2007	8,663	4,203	3,000	9,866	167,806	104,316	63,490
2008	8,117	3,866	3,000	8,983	176,789	105,374	71,415
2009	8,919	3,163	3,000	9,082	185,871	106,837	79,034

Source: GES (HRM/TED) the Net Cumulative is the desired number of trained teachers expected in the classrooms of the basic schools. The difference is the figure that either get posted into managerial position, posted into the senior high schools after further studies, retirement and those who leave the classroom to seek employment in other sectors of the economy.

Table 4: Trend In The Number Of Trained Teachers By Region

	Region	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
1	Ashanti	17795	17812	17812	18207	18999	21357	21970	22916
2	Brong Ahafo	9432	9290	9070	9108	9533	10774	10451	10680
3	Central	8980	8677	8508	8445	8620	9646	9897	10313
4	Eastern	14160	14195	13953	14072	13358	15255	16281	16629
5	Greater Accra	10002	9742	10138	10797	10611	12249	13119	12703
6	Northern	4973	5284	5214	5487	6191	7319	7115	7384
7	Upper East	2727	2639	2744	2927	3126	3848	3608	3542
8	Upper West	2163	2238	2217	2325	2864	3056	2891	2932
9	Volta	11593	11031	10991	11224	10973	12372	11962	11780
10	Western	8284	7552	7544	7572	7322	8440	8080	7958
	Total	90109	88460	88191	90164	91597	104316	105374	106837

Source: Ministry of Education: EMIS 2000-2009

Table 5: Percentage of Cohorts with Aggregates 6-30 in BECE from Selected Well-Endowed and Deprived Districts

Well-Endowed Districts	2004	2005	2006	2007	2008	2009	2010	Average
Afigya Sekyere	67	71	68	56	77	81	64	69
Asutifi	84	82	76	53	45	61	62	66
Agona	44	47	47	49	47	46	38	45
East Akim	46	45	46	47	55	60	54	50
Accra	79	77	76	79	78	80	76	78
Tamale	52	51	47	48	50	54	42	49
Kassena-Nanakani	53	55	52	50	49	51	37	50
Lawra	53	54	62	55	47	47	50	53
Akatsi	58	54	51	46	42	43	48	49
Ahanta West	46	46	39	42	43	53	47	45
Deprived Districts	2004	2005	2006	2007	2008	2009	2010	Average
Ahafo Ano South	24	40	31	40	37	37	32	34
atebubu-Amantin	65	57	67	71	32	53	37	55
Abura-Asebu-Kwamankese	33	32	39	40	41	54	37	39
Bole	69	55	60	64	50	43	33	53
Bolgatanga	54	57	58	54	56	58	34	53
Jirapa Lambussie	56	54	49	49	48	46	41	49
Nkwanta	44	48	50	52	53	48	60	51
Mpohor-Wassa East	46	39	42	51	41	57	67	49
Afram Plains	35	43	49	40	59	55	49	47

Source: GES/WAEC: League Table developed by the West African Examinations Council and submitted to the Ghana Education Service- Basic Education Division. This league table of district performance in BECE is annually published in the daily News Papers- the Daily graphic.

Table 6 : Trend In The Number Of Untrained Teachers By Region

	Region	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
1	Ashanti	5010	6074	5570	6112	7948	10092	10079	11180
2	Brong Ahafo	5768	6884	6696	7199	7526	9308	10235	10356
3	Central	4083	4638	4576	4962	5936	7852	7638	7672
4	Eastern	4291	5032	4737	4752	4596	6319	7096	7312
5	Greater Accra	727	957	696	768	974	1155	1004	985
6	Northern	3839	4296	4259	4564	5941	8026	10695	11670
7	Upper East	932	1322	1200	1370	2195	3119	3601	3589
8	Upper West	659	809	752	729	1685	2786	3013	2855
9	Volta	2315	2666	2619	2805	3282	4939	5983	6228
10	Western	5545	6042	6119	6457	6730	9188	9670	9967
	Total	33169	38720	37224	39718	46813	62784	69014	71814

Source: Ministry of Education: EMIS 2000-2009

Table 7: Indicators On Kindergarten Teachers In Public Schools

Details	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Teachers	19,043	19,868	33,175	39,053	22,252	27,803	28,366	30,443
Trained	5,531	5,456	10715	11131	7278	10089	8696	9421
Untrained	13,512	14,412	22460	27922	14974	17714	19670	21022
% Trained	29%	27%	32%	29%	33%	36%	31%	31%
% Untrained	71%	73%	68%	71%	67%	64%	69%	69%

Table 8: Indicators On Primary Teachers In Public Schools

Details	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Teachers	64,197	65,777	64,631	66,802	70,334	84,324	87,665	88,994
Trained	49,538	48,340	47724	48299	47170	52362	52108	51995
Untrained	14,659	17,437	16907	18503	23164	31962	35557	36999
% Trained	77%	73%	74%	72%	67%	62%	59%	58%
% Untrained	23%	27%	26%	28%	33%	38%	41%	42%

Table 9: Indicators On JHS Teachers In Public Schools

Details	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Teachers	40,011	41,535	41,653	43,400	45,824	54,210	58,357	59,214
Trained	35,013	34,664	35076	36269	37149	41865	44570	45421
Untrained	4,998	6,871	6577	7131	8675	12345	13787	13793
% Trained	88%	83%	84%	84%	81%	77%	76%	77%
% Untrained	12%	17%	16%	16%	19%	23%	24%	23%

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