AN ANALYTICAL STUDY OF THE LABOUR MARKET FOR TERTIARY GRADUATES IN GHANA

A

WORLD BANK/ NATIONAL COUNCIL FOR TERTIARY EDUCATION

& THE NATIONAL ACCREDITATION BOARD

PROJECT

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EXECUTIVE SUMMARY

There are three major aspects to the issue of tertiary education policy in Ghana from the perspective of the economy, namely,

1. Developing the human resource capacity to meet both local and international economic challenges
2. Designing effective financing schemes, and
3. Re-aligning institutional aspirations and mechanisms in the education sector with those of the national economy.

Ghana needs a skilled labour force to meet the demands of global competition. However, tertiary education is expensive, and the entire cost of its provision cannot be borne by the government alone. For the private sector to be involved in the process of human resource development at the national level, there is the need to make tertiary institutions transparently efficient in the use of existing resources, in terms of focusing on the needs of the economy and the requirements of good governance. This report covers an assessment of the extent to which higher educational institutions produce the types, mixes, and qualities of skilled human resources to meet current demands of the Ghanaian labour market.

The output of various tertiary institutions in terms of disciplines and gender, are compared with the demands of the economy, measured in terms of the characteristic requirements of advertised jobs, to ascertain the nature and extent of the "mismatch" or gaps between educational supply and market demand. Some labour sector executives were interviewed, to ascertain public perceptions about the quality of tertiary education and the mechanisms that should be developed to improve on it.

The issue of financing, which is at the core of tertiary education development in Ghana, is inextricably linked with the perceived problem of quality and relevance.

The study revealed that:

1. The problem of supply-demand gaps in graduate output is real: there is an over-supply of graduate labour in those courses that are easily accessible, in particular arts and humanities, and an under-supply in critical areas, like engineering, accounting, medicine, information technology and management.

   The existence of supply-demand gaps not only contributes to the problem of graduate unemployment but also undermines the efficiency of public investment in tertiary education, and therefore the issue needs to be addressed.

2. Many employers are interested in establishing or strengthening job attachment programmes for students, since they see this as a more efficient way of improving quality.

   For such interaction between the private sector and tertiary institutions to be effective a policy framework for national student job attachment should be developed. Many graduate students still prefer work in the public sector. The skills and experiences gathered through job attachments could help them decide on their career goals more efficiently.

3. Tertiary education remains an important factor for escaping long-term unemployment and poverty. But the achievement of individual educational goals requires overall growth of the Ghanaian economy, as well as effective compensation mechanisms in the various sectors of the economy. The increase in the incidence of graduate unemployment is due partly to the fact that most graduates have expectations, in terms of wages, that cannot be met by the labour market. There is the need therefore to improve labour market information systems, provide graduating classes factual information about the labour market in order to reduce such expectations.

To improve on the relevance and quality of tertiary output, and minimize on the problem of supply-demand mismatch, the following broad recommendations are made:

- Re-organisation of tertiary institutions: This should involve curriculum review; detailed analysis of comparative advantage among institutions that will lead to productive and cost-effective specialisation among them; review of faculty remuneration; and improved governance.
- Creation of an environment for private sector, both corporate and individual, participation in tertiary education financing, through decentralisation of management in tertiary institutions, introduction of cost-saving reforms, and enhanced public access to educational institutions- sharing of facilities, publications, etc.

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1.0 INTRODUCTION

1.1 Background

This study is intended to provide feedback to the National Council for Tertiary Education (NCTE), the National Accreditation Board (NAB) and the tertiary institutions in Ghana, on the quality and relevance of curriculum and teaching in tertiary institutions.

There are three major aspects to the issue of tertiary education in Ghana and the world at large, namely,

- Developing the human resource capacity to meet challenges posed by the domestic and international economy,
- Designing effective financing schemes, and (related to these two issues),
- Re-aligning educational objectives with the requirements of the economy, so as to enhance the social returns to higher education.

The World Bank in its World Development Report of 1998/99 has highlighted the issue of knowledge and information gaps as critical factors in the development of nations (The World Bank, 1999:1). In the World Employment Report (WER) of 1998-99 the ILO has noted that, "the level and quality of skills that a nation possesses are becoming critical factors" in determining a country's ability to take advantage of the new opportunities, in a world of increasing globalization and technological change. (ILO, 1998:10). The ILO further described education and training as "the root and branch of global competitiveness".

In terms of the supply of educated manpower Ghana is highly rated among African countries, according to the World Economic Forum/HIID (1998). However, serious doubts have been expressed about Ghana's ability to meet the increasing global competition, given the current level of skills available in the Ghanaian labour market. Responding to an International Finance Corporation (IFC) report in 1999 on international investment flows the executive director of CEPA, Dr. Joseph Abbey lamented the possibility of Ghana failing to attract foreign direct investment due to its poor human resource base. Other notable individuals who have commented on Ghana's human resource capacity in the context of the challenges posed by globalisation and economic development of Ghana include Dr. K.Y. Amoako (Executive Secretary of the UNECA) and Nana Wereko Ampem (Chancellor of the University of Ghana).

In 1994 a UNDP report on human resource capacity in Ghana noted,

> *At this threshold when Ghana should get ready to enter into the 21st century her human resource capacity and utilization gives cause for concern. The quality, quantity, degree of utilization, levels of performance/productivity, attitudes to work, standards of husbandry, supply and demand relationships of critical, high level skills …need to be improved upon..(p.109)*

The UNDP report further listed a number of areas where human resources are lacking, notably skills in policy analysis, professional skills in accountancy and finance, engineering, statistics, planning, marketing and management, medical and health, etc.

Apart from the human resource capacity issues, the government of Ghana has to grapple with the problem of tertiary education financing. Thousands of graduates are being

produced each year. However, there are questions on the type of education and training the various institutions are providing, in terms of quality and relevance, and what should be done about it. At the National Economic Forum held in 1997 in Accra participants identified skill mismatch as one of the five major obstacles to increasing employment opportunities and promoting human development in Ghana (NDPC, 1997: Section 5:28-37). The participants therefore recommended as a solution to the skill mismatch problem, among other things that:

- A national body should be set up to identify and project human resource requirements on a national and continuous basis
- A national labour database should be set up, to provide current information on the situation of the labour market in Ghana, and
- National skill requirements should be estimated for the next five years in the various sectors, especially in the growing sectors of agriculture, industry, and telecommunication.

So far no concrete effort has been made even to obtain baseline data on the current demand and supply situation in the Ghanaian labour market.

1.2 Objectives of the Study

The overall objective of this study is to assess the extent to which higher educational institutions, taken as a system composed of universities and polytechnics, produce the types, mixes and qualities of skilled human resources that meet the demands of the current labour market in Ghana.

The analysis focuses on five broad issues, namely:

- The evolution of employment of university and polytechnic graduates in the modern sector during the period 1990-2000, and how this compares with other countries of roughly similar size
- The annual output of graduates of tertiary institutions by level, type of studies, and field of specialization, and the extent to which this corresponds to employment opportunities in Ghana, noting cost differences in producing these graduates and the potential for improved returns to scale in higher cost disciplines
- The chances of employment and the extent to which available opportunities match training, noting options available to potential unemployed graduates and subject to levels of remuneration
- The nature of skill shortages employers face, and their response to such shortages, and
- The governance mechanisms required to ensure that graduates are equipped with skills required by the labour market, including modes of participation of and incentive systems for private employers in order to promote the changes identified as most critical.

The specific terms of reference for the study are listed below.

1.3 Terms of Reference

i) Identify specific sub-sectors of recent and likely economic growth

ii) Study the relationship between the supply of graduates of the tertiary institutions and the demands of the labour market

iii) Identify the extent of graduate unemployment in Ghana among university and polytechnic graduates as well as the relevance of the education received to the labour market

iv) Ascertain employers' assessment of the job performance of graduates;

v) Assess the adequacy of current tertiary programmes to satisfy labour requirements in both quantitative and qualitative terms for the eight disciplinary areas listed below:[1]

- Business management/MBA programmes
- Accounting and finance
- Economics, and other social sciences
- Computer science/informatics
- Medicine and health sciences
- Engineering
- Agricultural science
- Other sciences

vi) Identify the types of skills and/or professions currently in short supply within the public and private sectors

vii) Interview at least five employers for each of the eight instructional areas listed

viii) Make recommendations for:

a. Remedying deficiencies in the performance as assessed by graduate employers

b. Improving collaboration between tertiary institutions and employers.

Based on the above-listed terms of reference we have organized this report into the following sections or chapters:

Table 1.1 Organisation of the Report

[1] These eight subject areas have been selected because they are deemed to be most critical for national economic development.

Chapter	Detailed Coverage
1. Introduction	covers terms of reference, and scope and methodology of the study
2. Economic growth and employment	covers the discussion of the sub-sectors of recent likely economic growth and also the potential for graduate labour absorption
3. Demand for graduate labour	covers the analysis of the demand for graduate labour based on advertised job vacancies
4. Supply of graduate labour	covers the analysis of the supply of graduate labour based on enrolments in tertiary institutions according to programmes, and discusses the issue of demand-supply gaps
5. Graduate unemployment	covers the discussion of graduate unemployment based on evidence from GLSS and other sources, notably the Ministry of Manpower Development and Employment
6. Relevance of tertiary education	looks at the issue of relevance and adequacy of current tertiary programmes to satisfy requirements of the labour market in respect of the eight listed areas of discipline
7. Conclusions and Recommendations	covers governance structures, and collaborative and incentive mechanisms for ensuring quality tertiary output.

1.4 The Scope and Methodology of the Study

The study pertains to the labour market for graduates of polytechnics and universities who completed their programmes between the period 1990 and 2000. The types of data used for the study included:

- Enrolment and output of tertiary institutions, by course and gender
- Positions or jobs requiring university degree or polytechnic diploma
- Existing vacancies within various organizations, and
- The extent of interaction between employers and tertiary institutions.

The main data and other types of evidence were taken from official and other published sources including the Ghana Living Standards Surveys (GLSS), and the administrative files of the National Council for Tertiary Education.

Primary data on employers' perceptions about the quality of graduates and areas of skill shortages was also collected. The sample of employers was selected at random. Nevertheless, consideration was given to large employers, noting that the larger the size

of the enterprise the greater the number of vacancies to be filled and the higher the caliber of personnel required for its day-to-day operations.

In addition to the enterprise level interviews, certain important, top-most officials involved with labour management at the national level were interviewed, to capture economy-wide perspectives.

1.5 Landmarks in the Development of Tertiary Education in Ghana

- 1919-1927: Establishment of Achimota College, Wesley College and Presbyterian Training College, to give higher training to Ghanaian teachers for the improvement of the quality of education in Ghana
- 1948: Establishment of the University College of the Gold Coast, to provide degree courses in the humanities and pure science
- 1951: Establishment of the College of Arts, Science and Technology, to provide training in applied fields
- 1960-1961: Full university status for the University of Ghana and the University of Science and Technology; the University College of Science Education was established in Cape Coast (later to be called the University of Cape Coast)
- 1962: College of Administration, established in 1960, was integrated into the University of Ghana as The School of Administration
- 1967: The Medical School, established in 1964 as an autonomous institution, became part of the University of Ghana
- 1969: Establishment of the National Council for Higher Education, to advise government on staff recruitment, conditions of service, and the financial needs of the universities
- 1972: Establishment of the National Service Scheme (NRCD 208), to utilize the skills of new graduates for national development
- 1987-92: Introduction of Education Reform Programme as part of the Structural Adjustment Programme, to re-orientate education from liberal education to vocational and technical skill acquisition and to increase cost-effectiveness and cost-recovery
- 1993: Promulgation of the National Council for Tertiary Education Act, Act 454.

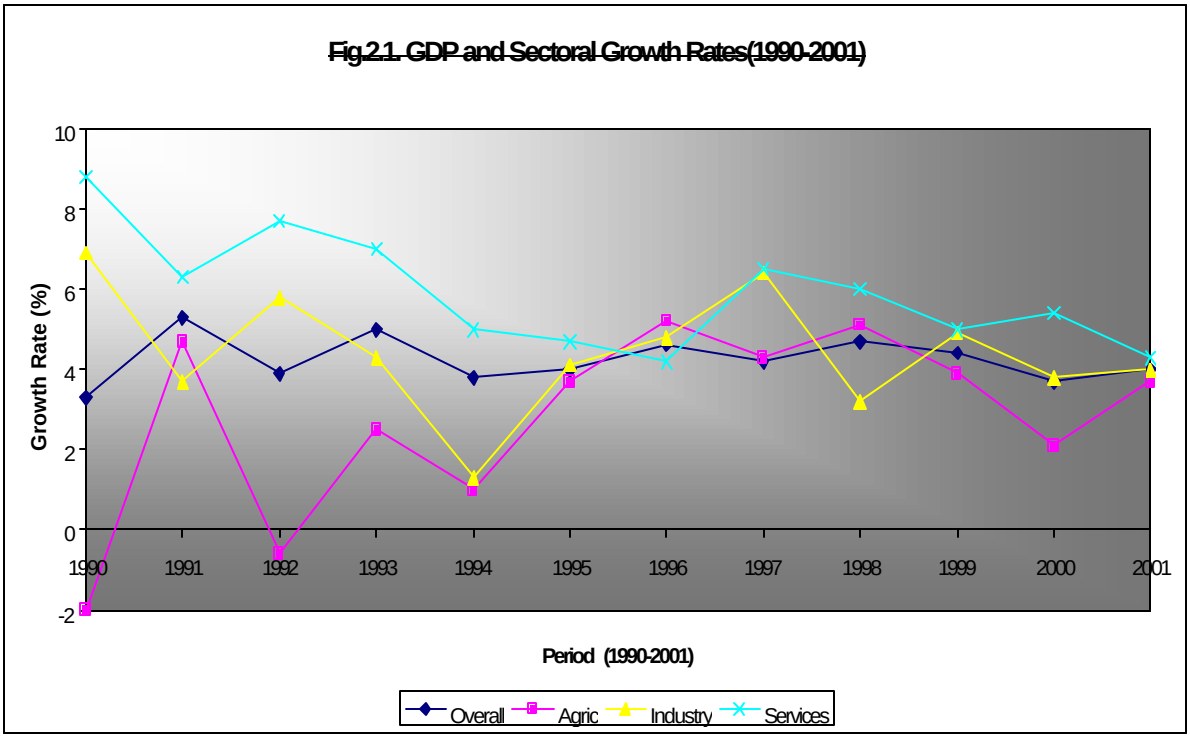
2.0 ECONOMIC GROWTH AND EMPLOYMENT IN GHANA

2.1 Overall Growth and Sector Shares

The level and growth of productive employment in an economy depends on a number of factors, notably the growth of aggregate output, level of aggregate demand, and labour intensities in the growing sectors relative to the stagnating or declining sectors of the economy. The growth performance of the Ghanaian economy has been unsatisfactory for many decades now. During the period 1990-2000, the overall economic growth rate was at an annual average of about 4.0%, which falls short of the annual projected growth rate of 8%, envisaged under Vision 2020. In 2001, the economy grew at the rate of 4.0%.

The average GDP growth rate of 4%, compared with the labour force growth of 2.8%, implies that the aggregate potential for employment growth during the period was limited. In the face of expanding educational enrolment the slow growth in aggregate employment has resulted in educational deepening whereby jobs that previously required workers with little education now demand those with higher education, though job content has remained essentially the same. This has led in turn to an increasing demand for higher education, as a means to avoid unemployment.

Sectoral growth rates and, hence, sectoral contribution to economic growth in Ghana, remained relatively the same in the 1990s, as shown in Fig. 1. It is observed that sectoral growth rates have been converging since 1995, with the service sector slightly leading with an average growth exceeding 5% per annum. The services sector recorded the highest growth rates, compared to both the agricultural and industrial sectors of the



economy, during the early 1990s. It started the decade with an 8.8% growth rate, compared to –2.0% and 6.9% for the agricultural and industrial sectors, respectively. However, since 1997 the sector's performance has declined to an average of 5.0% as a

result of the decline in the industrial sector following the energy crisis and the diminishing availability of foreign exchange to finance raw material imports.

Consequently the relative shares of the broad sectors of the economy has remained substantially the same, with agriculture, industry and service sectors contributing 36%, 25% and 29% of GDP, respectively, during the period 1995 and 2000. Thus, all other things remaining equal employment shares should have remained the same. However, broadly speaking the share of agriculture in the labour force increased from about 46% in 1988/89 (according to GLSS data) to 53% in 1998/99. This shift has been the result of the improvement in terms of trade in favour of export farmers but also the shortage of paid employment and the decline in relative earnings in the urban informal sector caused by over-crowding especially in the trading and commerce sub-sector.

2.2 Growth and labour absorption

Based on the analysis of a simple neoclassical aggregate production function, one could deduce that growth in output is a necessary, though not a sufficient, condition for the growth of employment. In a situation where growth in output is stagnant any increase in employment could only be the result of a decline in the average productivity of labour, which by itself is an indicator of a slack in effective demand for labour. The sufficient condition for the growth of aggregate employment in a growing economy is that expansion of the labour-absorbing sector is greater than that of the labour-saving sector. This condition ensures that the demise of jobs in the latter sector would be more than offset by the creation of new opportunities in the former.

The Ghanaian labour market is characterized by a situation where about 230,000 new job seekers enter the job market annually. Only about 2 percent are employed by the formal sector. Among the large pool of the unemployed are graduates from the Universities and other tertiary institutions. This pool has been kept low only by the exodus of recent graduates to Europe and North America and other countries in Africa and Asia.

It is estimated that, for a significant expansion in aggregate employment to occur, a GDP growth of at least 7% per annum is needed, after taking into account the labour force growth of 2.8% per annum and a labour productivity growth of 2% per annum (Ministry of Employment and Social welfare, 1996). Thus, the average GDP growth rate of 4% in the 1990s barely provided what is needed to maintain the current nominal employment rate, implying that more than 40% of the additional labour force is added to the already existing mass of underemployed and unemployed per annum, that is, roughly 92,000 persons. This figure does not include labour displacement in labour-saving sectors such as mining and banking and finance, which incidentally have been among the fastest growing sectors. Some casual evidence shows that labour intensity differs widely among the various sectors of the Ghanaian economy (Box 2.1). The implication is that to improve aggregate employment performance in Ghana attention should to be focused on specific sectors of the economy.

Box 2.1

Some Empirical Facts About Labour Intensity in the Ghanaian Economy

1. Labour content per unit of domestic value added is highest in the manufactured exports sector than in domestic production in import-substituting industries. Exportable goods are in general more labour intensive. Labour intensity is highest in the wood and garments sub-sectors.
2. Elasticity of substitution is 6-8% and output elasticity of labour demand is 3-5%, in the manufacturing sector.
3. Service sector has highest labour absorption rate, especially in packaging, and tourism sub-sectors.
4. Mining sector has the lowest labour absorption rate; however it has the widest linkages with other sectors of the economy.
5. On per dollar basis, foreign direct investments in export trade create more jobs in the short run than investment in other sectors; the lowest employment to investment ratio is in the service sector where every $96,000 worth of investment creates only one Ghanaian job (See table below). A corollary of this is that service sector jobs created by FDI tend also to be skill intensive and high wage, compared with export sector or tourism jobs.

Projects Registered by Ghana Investment Promotion Centre (GIPC)
(Between September 1994 to December 1999)

Sector	Number of Projects	Total Investment Cost $ml	Expected employment creation			Investment Cost per Ghanaian Employed $ml
			Foreign	Ghanaian	Total	
Service	264	831.61	847	8680	9527	0.096
Manufacturing	251	278.47	971	17323	18294	0.016
Tourism	117	22.01	244	2481	2725	0.009
Building&Const	83	105.18	478	9575	10053	0.011
Agriculture	82	169.46	314	9775	10089	0.017
Export Trade	67	8.57	131	1011	1142	0.008

Source: GIPC Records

2.3 Formal Sector Employment in Ghana

Official employment statistics in Ghana is usually classified into paid employment, usually referred to as formal sector employment; self-employment and own account workers, unpaid and family business employment, usually referred to as informal sector employment. Paid employment accounted for less than 18% of the labour force in 1998/99 (GLSS), whilst self-employment including agricultural self-employment accounted for the remaining 82%. As illustrated in Table 2.4, the percentage of the labour force in paid work declined by 6.2% points from 23.0% in 1988/89 to 16.8% in 1998/99. This displacement was absorbed largely by the food and export crop sector. Thus, there was a decline in the numbers employed in the formal sector, whilst the labour force grew by some 230,000 per annum during the period.

Table 2.1 Distribution of Labour Force by Type of Employment

Type of work	1988/89	1991/92	1998/99	% Change 1988/89-98/99
Paid Work: Public	14.0	13.5	9.8	- 30.0
Paid Work: private formal	6.3	3.9	4.4	-30.1
Paid Work: informal	2.7	3.1	2.6	- 4.0
Export farmer	7.0	6.3	7.8	11.4
Food Crop farmer	38.8	43.6	41.6	7.2
Non-farm self-employed	30.5	27.6	31.6	3.6
Others & non-working	0.8	2.0	2.1	----
Est. Labour force (ml)	5.4	6.0	7.5	38.9

Source: Derived by author from GSS (1995, 1999).

In sharp contrast with the overall labour force, tertiary labour is mainly employed in the formal sector, and the proportion of such employed is increasing, as illustrated in Table 2.2. According to Ghana Living Standards Survey data, in 1988/89 66.7% of the labour force with university degrees were employed in the public sector, 15.6% in the private sector as paid employees, and only 17.8% in self-employment (Ghana Statistical Service, 1996). In 1998/99, 74.4% and 15.4% of tertiary graduates were employed in public and private paid work, respectively, representing an increase of 7.5% points in the proportion of tertiary graduates in paid employment between 1988/99 and 1998/99, compared with the decline of 6.2% points in the proportion of the overall labour force employed in the formal sector.

This trend explains the increasing demand for tertiary education (as a means to more stable jobs in the formal sector) and also the unchanging expectation for public sector employment among tertiary graduates.

Table 2.2 The Distribution of University Graduates by Employment Status (%)

Sector	**1988/89**	**1998/99**
Public Employment	66.7 (14.0)	74.4 (6.4)
Private Paid Employment	15.6 (6.3)	15.4 (6.0)
Self-employment	17.8 (79.7)	10.2 (87.5)
Unemployed or Unclassified	-- (0.8)	-- (0.5)

Note: Figures in parentheses relate to the proportion of the total labour force in the particular employment sub-group.

Source: GLSS 1987/88, 1988/89, 1991/92 and 1998/99

In the 1960s and 1970s, the labour accommodation rate in the formal sector was estimated to be about 1.33, that is, there were thirty-three percent more jobs for each new labour market entrant with secondary education or higher (Squire, 1981). This means tertiary graduates had easy access to formal sector jobs. Given that earnings in the formal sector were on average higher and job security greater than in the informal sector, the majority of tertiary graduates found informal sector unattractive. Though, the

differential in earnings between the formal and informal sectors has declined in recent years, most graduates still look up to the formal sector, in particular the public sector, for their first job.

While the largest proportion of tertiary graduates is currently in paid employment, the proportion of recent graduates in that sector appears to be declining. Previously there existed an implicit policy of guaranteed employment through the Public Services Commission and the Office of the Head of the Civil Service. However, in 1994 less than one-sixth of university graduates were employed by the Public Services, compared with 60% or more in the 1970s. The latest statistics show that overall employment in the civil service stood at 330,000 in 1996, compared with 301,000 in 1986, indicating an increase of 2700 new employment per annum, which is far lower than the annual output of the tertiary institutions (IMF 1997).

This change in the state of graduate employment has resulted from a number of factors, notably the slow growth of the economy, which has imposed severe fiscal constraints on government and thus its ability to absorb the increasing university output. The introduction of ERP/SAP in the early 1980s to correct the structural imbalances in the economy as a way to economic recovery and sustainable growth, entailed curtailment of public sector wage bills, with resultant retrenchment of labour.

Employment in the formal private sector was even worse. From about 45% in 1960, the private sector accounted for only 25% of formal sector employment in 1990. The main reasons for this poor trend in private formal sector employment include:

- Slow growth in productivity as a result of lack of investment in new plant and equipment. Industrial growth has lagged behind overall growth for many decades now, and actually declined from an average of 11.2% in 1984-88 to 4.1% in 1989-98, reaching its lowest in fifteen years of 2.5% in 1998.
- The lack of (and high cost of) working capital, with interest rates averaging over 35% in the last five years, due principally to the crowding-out effect of government borrowing from the banking system and high inflationary pressures of government over-spending.
- Lack of investor confidence in the economy resulting from fear of political instability and poor governance practices, and
- Increasingly turbulent industrial relations atmosphere.

In general formal sector employment rates have been low in Ghana due to a combination of the following factors:

- Slow economic growth- growth rate of 7% is needed to make impact on employment, but average growth has been around 4%.
- Low investment rate- employment growth among Sub-Sahara African countries has been positive only for those with investment rate exceeding 15%, but Ghana has had an average of less than 10% since 1980. Formal sector employment declined in the 1990s in countries like Benin, Niger, Burundi and the Central African Republic where gross investment rates were low, and improved in countries like Botswana, Mauritius, and Seychelles where investments were high.
- Institutional and market restrictions, in the form of
    - Non-competitive product and labour markets, as reflected in, for example, high fixed costs of labour, and
    - Adversarial industrial relations system

- Inadequate skills, including job/employment search skills
- Poor labour market and business information system (low information production and dissemination management)

2.4 Some Conclusions

Relative to the overall labour force, tertiary graduates are better off in terms of access to formal sector employment. Educational deepening has resulted in the employment of people with high credentials. Boateng (1998) has shown that during the period 1981-1996 the demand for high-skill labour increased rapidly, while that of low-skill labour declined, due to the increase in labour demand in the skill intensive sectors.[2] The next section, Section3 looks at trends in the demand for graduate labour.

[2] "High-skill labour" is defined as labour "belonging to the middle or upper class occupations generally referred to as professional, semi-professional or managerial, which usually have at least some post-secondary education, and some specific skills or a reasonable number of years of experience.

3.0 THE DEMAND FOR GRADUATE LABOUR

The term "demand" is used in economics to express the relationship between the quantity of a good or service that will be purchased at a given period of time, on one hand, and, on the other hand, the price of that good or service, the income, taste and preferences of potential buyers, and the prices of related goods and services. In this study, we have used "demand for graduate labour" loosely, to denote the estimated or potential number of graduates that is employed in the various sectors of the economy, without relating the number employed to the average wage of graduate labour or, for that matter, the average wage for other types of labour.

3.1 Estimating the Demand for Graduate Labour

Three main sources of demand for graduate labour may be identified, namely[3]:

1) Government demand, comprising the civil and public services
2) Private business demand, including state-owned commercial enterprises, and
3) Non-governmental and not-for-profit organizations, including voluntary organizations

In general, government demand is influenced largely by non-economic factors, while NGO and other voluntary sources of labour demand are influenced in an inversely proportional manner by local economic factors. Most of the analysis in this section refers to the last two sources of demand, which may be classified together as private demand. Demand by public institutions (subvented agencies) whose operations are largely driven by non-governmental demand for services is also considered. We have, however, excluded demand by the central government or Civil Service and for graduate teachers by the Ghana Education Service.[4]

Data on the potential number of graduates employed in the economy should be obtainable from any of the following sources:

1) Advertised job vacancies
2) Establishment surveys
3) Manpower projections based on existing employment ratios
4) Household surveys and population censuses that trace changes in the number employed.

However, statistics on employment is critically lacking in Ghana from official sources. Since 1974 there have not been any establishment or manpower surveys. Thus, many

[3] Since the 1970s the external labour market has been a major employer of Ghanaian graduates, without which the graduate unemployment problem would certainly have been worse. Globalisation has in recent times accentuated this form of exodus (brain drain) of Ghanaians abroad. Estimates of graduates going abroad for employment, nor of those returning after studies abroad, are not available, but net emigration is likely to be positive.

[4] GES and Civil Service vacancy advertisements usually indicate "any degree" and thus are not helpful in detailed analysis required here. However, in chapter 4 (Table 4.2) we include the possible demand by central government in the estimation of the excess supply of graduates.

researchers rely on the GLSS, which has historical gaps. In this study, therefore, we used advertised job vacancies to derive the pattern of graduate labour demand.

Technically advertised vacancies present a better picture of the desired demand than do actual employment figures, because actual employment is rather an outcome of the interaction between desired and available quantities. Thus, actual employment values may under-estimate demand, where there is a prevalence of skill shortage or labour market mismatch, as is the case in Ghana.

Though, very few employers register their job vacancies as required under the labour laws, in the case of high-skill jobs such as management and professional jobs, a survey by Boateng (1998) has indicated that more than four-fifths of employers publicly advertise their vacancies.

Therefore our attempt to use advertised vacancies in this study as a proxy for the demand for graduate labour may be considered appropriate. Advertised vacancies have been used to estimate trends in graduate employment in Ghana (Boateng 1998; Ministry of Employment 1999).

3.1.1 Dataset

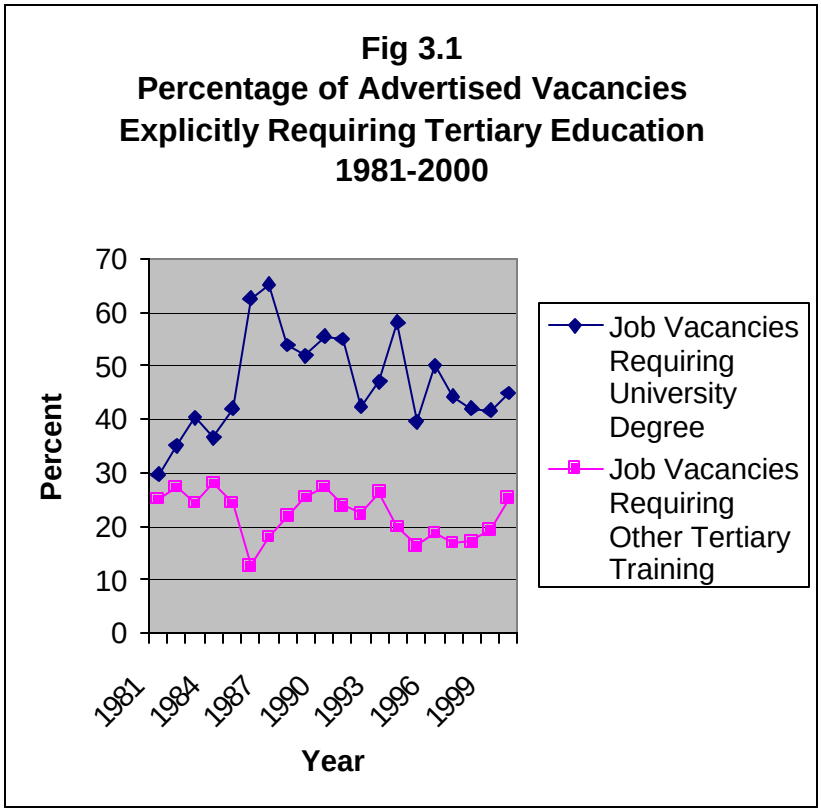
The dataset used in this analysis covers the period 1981 to 2000, entailing a total of 38916 job vacancies (observations). As already pointed out, the database does not include vacancies in the Civil Service or teaching positions in the Ghana Education Service. It does not also include private advertisements on workplace or school notice boards.

The main variables include:

1. The sectoral location of the advertised job vacancy: the database has classified the economic sectors into 11 different groups
2. Job description: 8 types of jobs are specified, such as professional, clerk and machine operator
3. Education requirement of the job vacancy: 7 types of education by level is specified, namely, postgraduate-MBA/PhD, other postgraduate, bachelors-humanities, bachelors-science, university diploma and professional certificate, for example ACCA, other diploma, for example, HND; and secondary or none
4. Age requirement for the job:
5. Skill requirements for the job: dummies representing seven skill areas are specified, including general, managerial and technical, computer and analytical, communication, personal attributes, language, and other skills, such as, gender and religious background
6. Experience, measured as number of years:
7. Geographical location of the job: 7 locations are specified including Accra-Tema, Kumasi, Sekondi-Takoradi, Cape Coast, other regions and outside Ghana
8. Course of study or specialization required: 8 areas are specified including general management; accounting, finance, banking and insurance; economics, law and other social sciences; computer science and information technology; engineering and technical; agriculture, environment, and natural resource; medical, biological and health sciences, including pharmacy; and arts and others.

3.2 Job Vacancies by Level of Education

It is observed that the share of tertiary graduates in advertised job vacancies increased during the period 1981 to 2000, as illustrated in Figure 3.1. The proportion of advertised vacancies requiring university education increased from about 30% of total advertised vacancies in 1981 to about 45% in 2000, having reached about 65% in the late 1980s. Job vacancies requiring polytechnic and other tertiary qualifications have remained relatively at the same proportion of about 25 percent.



Data Source: Compiled by Boateng (0ngoing) Skill Demand Database.

Employers in Ghana generally discriminate against holders of polytechnic qualifications, because of uncertainty about quality and hence placement on the job hierarchy. This partly explains the lack of growth in the demand for polytechnic graduates relative to university graduates. The increasing demand for university graduates, on the other hand, may be explained by two main factors: the relative growth in job opportunities in skill-intensive sectors, such as banking and finance, and educational deepening across sectors of the economy.

3.3 Job Vacancies by Type of Course

The data used for this study is disaggregated by type of course for only the year 2000. Therefore we could evaluate the demand for the eight selected programmes (see Terms

of Reference) for the year 2000 only. The distribution of advertised vacancies by programme and course of study in 2000 is shown in Table 3.1.

Table 3.1

Job Vacancies by Type of Course and Programme, 2000

Type of Course	Percent Of Advertised Jobs	Percent Distribution by Type of Program			
		Post-Graduate	Bachelor	Prof/HND & Univ. Diploma	Other or Unspecified
Management	18.9	25.2	44.8	26.9	3.1
Accounting, Finance, Banking &Insurance	15.9	15.0	40.0	37.0	8.0
Economics & Other Social Sciences	11.6	44.1	47.1	5.9	2.9
Computer Science/Informatics	8.1	16.3	55.7	7.5	20.4
Medical & Other Health Sciences	6.9	41.5	22.4	28.1	8.0
Engineering, Technical	15.8	9.1	46.2	33.8	10.9
Agric., Environment, Resource	3.3	29.4	45.8	21.1	3.7
Arts & others	19.6	9.8	13.8	26.5	49.9
TOTAL Percent	100	20.8	37.7	25.4	16.1
(Number)	(3262)	(678)	(1228)	(829)	(527)

Source: Boateng (ongoing). Skill Demand Database

In Table 3.1 the second column shows the distribution of advertised vacancies by course of study, for example, management and engineering. The third to the last columns show the distribution of vacancies by type of programme, for example, postgraduate and bachelor's, within each course of study. For example, the percentage of jobs for computer science graduates that required post-graduate training in that discipline in 2000 is shown as 16.3%. The last row shows the distribution of all vacancies by type of programme.

It is observed that a high proportion of vacancies went to business courses-management and accounting- (34.8%), and engineering (15.8%). Relative to enrolments

in the various courses, it could also be said that computer science and informatics and medical sciences have a disproportionately higher share of job vacancies.[5]

Slightly more than 20 percent of all advertised vacancies in 2000 explicitly required post-graduate degrees, one-third of which were for MBAs or final certification in professional accounting and other management programmes. 37.7% of all vacancies required bachelor's degrees, 25.4% required partial qualification from professional bodies, HND or university diploma, whilst 16.1% required secondary education or did not specify the type of academic qualification. Nearly 50% of jobs which required tertiary education but did not specify level of tertiary education, were in the arts and the general subject areas such as art and graphic design.

More than a quarter (25.2%) of jobs requiring management training demanded postgraduate degrees. Out of this 81 percent were for MBAs. About 45 percent of jobs requiring management training were for those with bachelor's degree, about 99% being B.Sc administration degree. In most cases, accounting jobs which required B.Sc (Admin., Accounting option) also stated as an equivalent the intermediate levels of the various professional bodies, notably, ACCA, ICMA and ICA. For higher level accounting positions, professional certification was emphasized more than the bachelor's degree. Some human resource managers indicated that the preparation and examinations of the professional bodies are more rigorous than university examinations and therefore prepare their students to perform better on their first jobs than do university accounting students.

The demand for postgraduate degrees was more prevalent (44.1%) among jobs requiring economics and other social sciences, compared with the other disciplines. The implication is that all other things being equal, those with bachelors in the social sciences face stiffer competition and hence lower chance of getting a job than their counterparts in the other fields. However, it is noted that those in business and management, and engineering and computer science also face some competition from holders of professional and HND qualifications. In view of the technical and practical nature of their job, and also in view of the short supply of IT graduates, more than 20 percent of jobs requiring computer science or information technology ignore formal academic qualifications and emphasize practical, on-the-job skills.

HND engineering students have the highest chance of getting a job, among polytechnic graduates. More than one-third of engineering jobs specifically required HND holders, which may be partly explained by the limited supply of university engineering graduates. The second most demanded HND course is marketing (in commerce especially), followed by accounting and institutional management. There are also good prospects for laboratory technicians in the health sector.

It was observed that agriculture diploma holders have relatively brighter chance in the rural banking and development NGO sector, where they are engaged as project officers, as well as in the non-traditional export sector, where they are engaged as farm

[5] Medical science and computer science together accounted for less than 8% of total final year university enrolments during 1999/2000, that is, about 370 out of 4380. In 1998/99 the output of the Computer Science Department at the University of Ghana was only 49, compared with the total output of 5718. (University of Ghana, 2001).

managers and supervisors. Also increasing is the demand for horticulturalist (holders of diploma or certificates) in the fast growing horticultural exports sector.[6]

Medical and health science graduates have no problems finding employment. There is an increasing demand for laboratory technicians and scientists in the various hospitals and medical laboratories. There is a growing demand for dentists and dental assistants. As the economy and hence standard of living improves the demand for health workers will increase, given that such demand is highly income elastic. Since 1993 more than 50 percent of all graduates employed into the Civil Service have been in the Ministry of Health. Thus, in fact there would be no supply to the private sector, if every medical and health graduate decides to accept government jobs and spent all their working time in government hospital and clinics.

Certain observations were also made from the job advertisements, concerning the equivalencies among programmes or courses from the employers' perspective. The following are some examples:

- Accounting - most employers appear to equate BSc. Admin or B.Com to ICA (part 2), ACCA (level 2) and ICMA (stage 2). In cases where fully chartered accountants are needed, the experience required of a bachelor holder was three years or more (usually 5 years) higher than those with professional qualification.
- Marketing - many employers appear to equate BSc. Marketing with HND Marketing, except that a longer period of experience of one or two years, were required of HND holders. Some employers specifically required membership of the Institute of Marketing.
- Human Resource management - most employers preferred BSc (Human resource option); but some specified in addition membership of the Institute of Personnel Management.
- Secretaryship - most employers preferred B.Sec., especially for the position of private secretaries. For administrative secretaries ICSA was usually mentioned. Holders of HND or Diploma in Business Studies (secretarial option) were sometimes encouraged to apply if they had substantial experience in a similar position, for example 5-10 years experience where only 2 years experience was required of a BSc or ICSA holder.

In addition to the above, the following programmes or courses of study were observed to be in significant demand by employers, though they appear not to be the favourite courses among Ghanaian tertiary institutions and students:

- BSc in Book Industry, or Publishing Studies
- BSc in Actuarial Science
- BSc in Jewelry
- Diploma in Horticulture.

[6] Non-traditional agricultural exports rose by 36% between 1997 and 1998, from $57 million to $78 million, whilst horticultural exports previously unknown in Ghana, reached about $20 million in 1998. (UNDP, 2000.)

3.4 Job Vacancies by Type of Skill

Academic qualification is not the only requirement demanded by employers from prospective employees. Most job advertisements explicitly ask for other requirements, usually referred to in the human resource literature as "job attributes". A sample of such attributes is attached as Appendix 8. . As described in the appendix, analytical skills refers to the ability to break down and analyze data; communication skills involve verbal and written skills in the English language, as well as skills in persuasion, bargaining and discussion; and personal attributes include team spirit, initiative, physique, drive, resourcefulness, etc.

The survey reveals an increasing demand for these attributes or skills from graduates, as shown in Table 3.2. It is observed that jobs requiring university degrees also required significantly more job attributes from prospective applicants than jobs than required less formal education. Thus the tendency in recruitment in recent times is for employers to seek workers who are ready to perform, and not just those who have degrees or long years of experience.

Computer skills required by employers ranged from basic word processing to awareness and competence in database and statistical applications. An increasing proportion of jobs requiring university degrees also demand computer and analytical skills, communication skills (in particular, English proficiency) and personal attributes. Whilst in 1995 only 13.4%, 0.4% and 1.5% of jobs requiring university degree also demanded skills in computers, communication and personal attributes, respectively, in 2000 the proportions increased to 45.7%, 38.6% and 41.8%, respectively. The data also shows similar trends in the other skill areas, namely, general, technical and managerial, and other non-English languages (not reported here). Looking at the percentages for 2000 relative to the average for 1995-2000, it is clear that non-academic skill requirements are increasing for all formal sector jobs. Irrespective of the level of academic qualification but particularly for jobs requiring university education these requirements are on the ascendancy.

Nearly 40 percent of jobs requiring university degrees now emphasize communication skills, compared with the negligible number (0.4%) in 1995. The possible reasons include: 1) Reporting requirements may have increased at the enterprise level, and 2) Employers probably have become wary of the communication deficiencies among recent graduates and, therefore, include communication skills as a requirement to screen out those with a deficiency. The increase in the demand for communication skills for jobs requiring other tertiary qualification from 8.5% in 1999 to 23.1% in 2000 may be due to the increase in the demand for HND in Marketing during the latter year. Communication skill requirements for the "other tertiary graduates" are lower than for the other educational groups, perhaps, due to the fact that the former include mostly professional jobs such as accountancy and institutional management, which normally do not require a great deal of communication skills to perform.

The requirement for certain personal attributes has been on the increase, because of the changing nature of organizations, which has resulted from technological changes as well as increasing competition in the market place. These changes require those in management and professional positions to be flexible in orientation, willing to take new initiatives and accept responsibility, so as to enable the firm meet the competition.

Table 3.2

Percentage of Advertised Jobs Requiring Specific Skills and Attributes from Prospective Employees by Level of Education (1995-2000)

Type of Skill/Education Level	1995	1997	1999	2000	Average 1995/2000
Jobs Requiring University Degree					
Computer and Analytical Skills	13.4	29.4	32.7	45.7	33.5
Communication Skills	0.4	11.7	21.3	38.6	20.6
Personal Attributes	1.5	18.9	32.8	41.8	27.4
Jobs Requiring Other Tertiary Cert.					
Computer and Analytical Skills	11.5	21.1	16.6	36.3	24.3
Communication Skills	-	9.3	8.5	23.1	11.4
Personal Attributes	1.6	16.7	13.3	29.0	17.2
Jobs Requiring Secondary or Lower					
Computer and Analytical Skills	14.8	26.7	23.2	25.0	23.3
Communication Skills	1.6	16.8	14.9	17.8	12.1
Personal Attributes	3.0	15.9	18.5	30.3	16.3

Source: Boateng (ongoing). Skill Demand in Ghana (Database)

Experience requirements are now stated in terms of competencies and skills, rather than years. Due largely to global technological changes and increasing competition, employers require assertive and quick minds operating in an electronically engaging environment (Box 3.1). This increasing trend in non-academic job requirements has implications for the relevance of tertiary education. In other words, employers are not only interested in those having higher education but also practical skills appropriate for job fulfillment. Is tertiary training oriented towards skill acquisition, or mere certification? If tertiary institutions are not giving training in these skill areas, how do their graduates acquire them and at what cost?

Box 3.1

Personal Attributes Most Often Required by Ghanaian Employers For Jobs Requiring Tertiary Education

1. Flexible and adaptable mindset
2. Creative and result-oriented
3. Able to work within schedule, with little or no supervision
4. Strategic thinker
5. Assertive and tolerant
6. Imaginative and willing to try new things
7. Able to make quick decisions
8. Able to work long hours without notice
9. Able to learn new techniques quickly and apply them to current environment

Source: Sampled from job advertisements in the Daily Graphic, January-June 2000.

3.5 Vacancies by Sector

Though graduate employment has increased relative to the overall labour force in the Ghanaian formal labour market, this growth has been concentrated in a few sectors of the economy. Table 3.3 shows the distribution of advertised job vacancies during the period 1990-2000. It is observed that the distribution of graduate employment follows closely that of the overall distribution of job vacancies.

Table 3.3. Sectoral Distribution of Advertised Job Vacancies

Sector	1990-1994		1995-2000		2000	
	All	Graduate	All	Graduate	All	Graduate
Agriculture	3.4	3.5	2.3	2.3	1.4	1.4
Forestry/Logging	2.5	2.5	0.9	0.7	0.3	0.3
Mining/Quarrying	4.9	5.1	3.0	3.4	2.6	2.7
Manufacturing	11.7	9.9	10.6	10.9	12.0	11.5
Construction	2.5	1.6	3.3	2.8	3.4	3.1
Banking & Finance	5.9	7.2	6.8	8.8	7.4	9.0
Commerce	8.0	6.2	7.8	6.0	6.0	5.6
Utilities	9.6	10.1	3.4	4.3	3.4	4.0
Public Administration	8.7	12.1	5.7	7.2	8.5	9.7
Education	12.7	9.9	15.0	17.5	16.1	18.7
Other Services	30.0	31.8	29.9	26.6	37.8	33.0
Unspecified	-	-	11.4	9.5	1.1	1.0
Total Number of Jobs	8409	4829	19216	12287	3510	2791
Graduate to Overall	(57.4)		(63.9%)		(79.5%)	

Note: “Commerce” and “other services” are combined for the period 1990-1994.

Source: Boateng (on-going) Skill Demand database.

It is further observed in Table 3.3 that the share of agriculture, forestry and logging, mining and quarrying, commerce, and utilities in advertised job vacancies dropped in 2000, compared with their average for the period 1995-2000. The share of the utilities sector and commerce significantly declined between 1990-94 and 2000, perhaps, due to privatization of the sector. This is also the case with public administration, which has been under restructuring and rightsizing since 1987. The manufacturing sector, banking and finance, construction, public administration, education and research and other services increased their relative shares in 2000.

In general, proportionately more tertiary graduates are employed in banking and finance compared with the overall population, whilst in agriculture, forestry and logging, mining and quarrying, manufacturing, construction and commerce proportionately less tertiary graduates are employed. The latter sectors are usually characterized by “pyramidal” staff structures, with a few professional and management staff and a large pool of semi- and

un-skilled personnel, while the former is characterized by “bee-hive-like” personnel structures with a sizeable middle level staff; hence, the difference in their absorption of graduate labour.

Though most tertiary graduates, particularly in the social sciences, prefer jobs in the banking sector, that sector accounts for less than 10% of the demand for graduate labour in the formal sector. It is observed that “other services” accounted for one-third of graduate labour in 2000, due mainly to the surge in the activities of non-governmental organizations in Ghana.

3.6 Areas of Potential New Demand

Given sector and occupation patterns in job vacancies, as well as the on-going structural changes in public and private sectors of the economy, the following could be described as potential sources of new demand for graduate labour:

- Policy analysis, planning, monitoring, and evaluation, in key ministries, developmental NGOs, and civil society groups (TUC, business associations)
- Budget officers, planners, accountants, etc. at district assemblies
- Information technology market- technologists (repair and maintenance), programmers, website designers, data entry and analysis
- Health and nutrition; doctors, nurses, laboratory technicians and scientists
- Food preservation, canning and non-traditional agricultural export
- Publishing and printing; packaging and marketing
- Credit managers in developmental NGOs. (Emphasis is placed on personal attributes)
- Purchasing and supply- for HND holders- in commerce and manufacturing
- Tourism guides- (Emphasis is on verbal and written skills)
- Environmental officers- emerging in the mining, construction and NGO sectors, for graduates in engineering, resource science or geography.

4.0 SUPPLY OF GRADUATE LABOUR

The supply of graduate labour is here defined in the ordinary sense as the number of graduates produced by the tertiary institutions in Ghana. On average less than 0.01% of those who enroll in tertiary institutions drop out or fail to graduate. Therefore, in the absence of official data on the actual number of graduates employed, one could use enrolment figures for the graduating class (the final year class) as the measure of supply.[7] We can, thus, define the supply of graduates in any given year, S_t, as total enrolment in the graduating class of the preceding year, N_{t-1}, allowing for the one year national service. That is, $S_t = N_{t-1}$. This equation implies that students graduating, for example, in the 1994/95 academic year are assumed to have entered the labour force in 1996.

4.1 Total Enrolment

Total enrolment in tertiary institutions increased dramatically during the period, 1990-2000, following the graduation of the first batches of Senior Secondary School students and the recognition of Polytechnics as tertiary institutions under the educational reform programme started in the mid-eighties.

The increase in total enrolment in the universities and polytechnics, from about 21,000 in 1994/95 to over 50,000 in 1999/2000, that is, more than 100% increase, as shown Fig.4.1 may be considered high, especially when compared with the growth in employment opportunities for graduates. However, when compared with the population aged between 18 and 25 years, that is, the enrolment ratio it appears low, particularly in comparison with other developing countries.[8] Furthermore, when enrolments are classified into courses or programmes, it would be found that some critical areas have supply deficits, while others are over-supplied.

Thus, the issue of enrolment relates much more to the supply mix rather than the supply level.

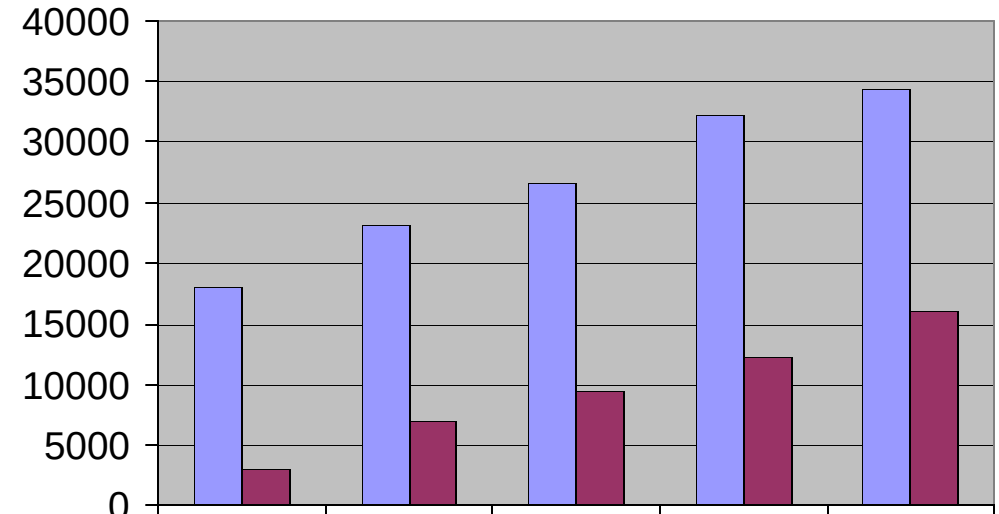
4.1.1 Enrolment by programmes

The trend in enrolment by university bachelor's and polytechnic programmes is illustrated in Fig. 4.2 and 4.3, respectively. It is observed that enrolment in the Bachelor of Arts and management programmes as a percentage of total enrolment in the universities have been above 65% and is increasing, from 65% in 1994/95 to 68% in 1999/2000. During the period 1994/95-1999/2000, the share of total enrolment accounted for by Bachelor of Arts courses increased by 4.1% points, whilst courses in medicine, engineering and other sciences declined by 0.3, 0.5 and 3.3% points, respectively. Thus, relatively speaking, enrolment in the sciences declined during the period under review, as illustrated in Fig. 4.2 and 4.3. This trend is worrying especially when in 1983 the percentage of tertiary enrolment in arts was only 56%.

[7] The universities do not publish data on the actual number of graduates produced annually on a regular basis.

[8] Tertiary gross enrolment ratio has remained low at 2% in Ghana, compared with an average of 6% for East Asia and South Asia in 1995. The average for sub-Sahara Africa is 1%.

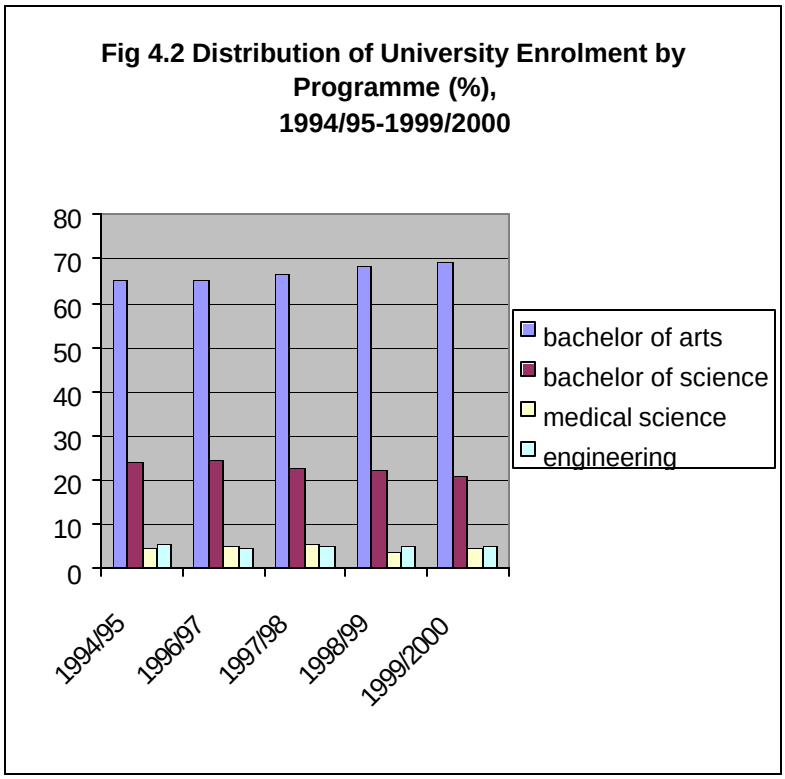
Fig 4.1 Total Enrolment in Universities and Polytechnics, 1994/95-1999/2000



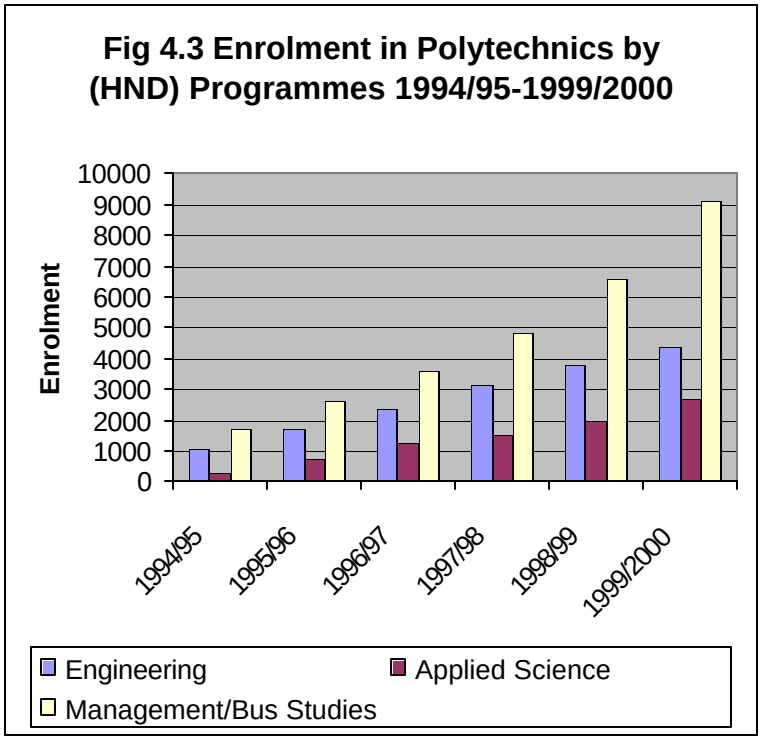
	1994/95	1996/97	1997/98	1998/99	1999/2000
Universities	17985	23128	26684	32283	34396
Polytechnics	2976	6977	9403	12303	16110

In the polytechnics, while enrolment in engineering increased four-fold between 1994/95-1999/2000, enrolment in management and business studies increased nine-fold. Thus, engineering, which in 1994/95 accounted for at least 35% of total HND enrolment, accounted for less than 25% of enrolments in 1999/2000.

In general admission into business and humanities far outstrip science-based courses. Therefore, those who do arts and business programmes at the SSS level appear to have a better chance of continuing than those who do science. The official cut-off point for admission into Level 100 courses at the University of Ghana, for example, has always been higher for science students (at aggregate 12 during the 2001/2002 academic year) than for the humanities (at aggregate 14).



Data Source: NCTE files



The enrolment gap between humanities and science is kept by the fact that admission into science is more effectively constrained by lack of facilities such as laboratory space, whereas course delivery in the humanities could take place in all kinds of environment. Thus, constraints imposed by facilities are less effective in the case of the humanities.

Furthermore, tertiary institutions have difficulty in getting qualified applicants for science and science-based courses. For many SSS students, the easiest way into the universities is through the study of liberal arts. Another factor militating against interest in science is the low relative earnings and low profile of technical professions compared with that of administrators and managers in Ghana. The fact is that those with arts and humanities degrees traditionally have easier access to public sector jobs. This trend has been observed in many African countries (The World Bank, 1994).

4.2 **GENDER DIMENSIONS IN TERTIARY ENROLMENT**

In this section we examine female enrolments vis-à-vis overall enrolment by year, course and programme in the universities and polytechnics, during the period 1994/95-1999/2000, with highlights on areas of progress or decline, and some possible reasons for the observed trend.

The proportion of female enrolment in tertiary institutions has been on the low side. Between 1994 and 2000, female enrolment, as a percentage of polytechnic enrolment, averaged 19.4%, and 25.3% in the universities. (Table 4.1 last row.)

Table 4.1 Distribution of Female Enrolment by Selected Programs (%)

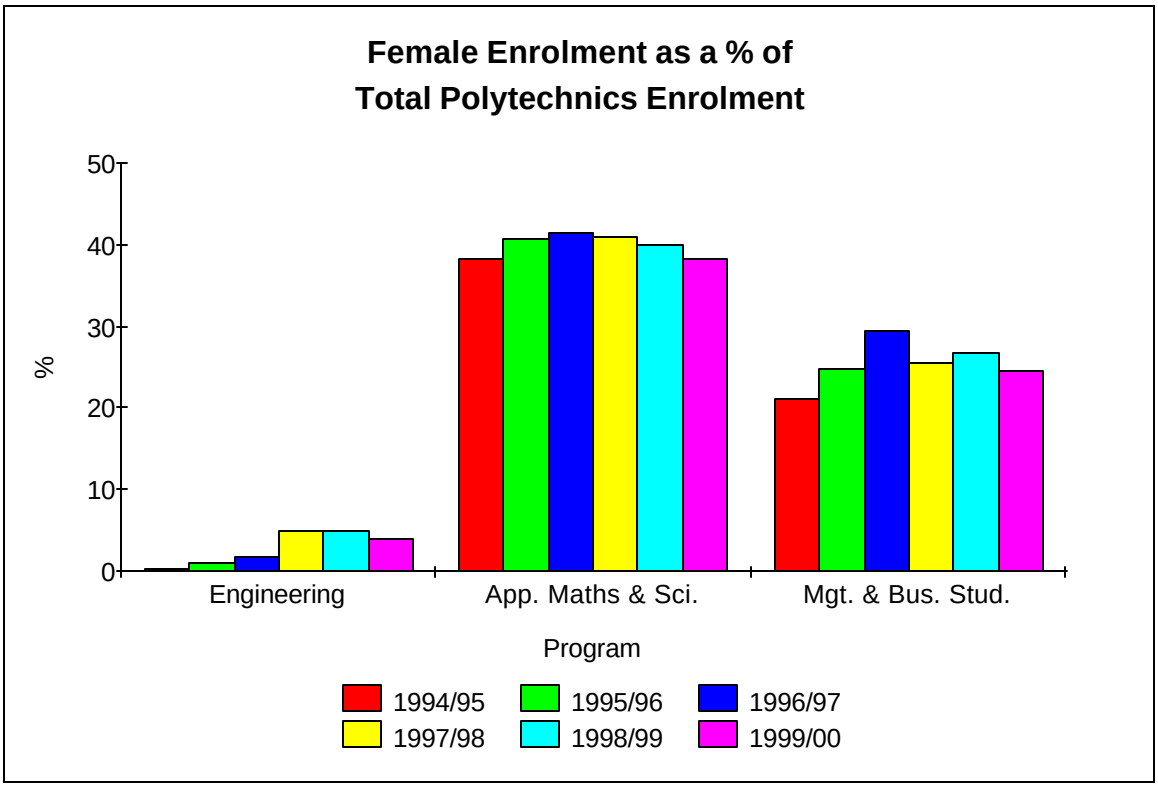
Programme	***1994/95***	***1995/96***	***1996/97***	***1997/98***	***1998/99***	***1999/00***
Universities						
Arts/Social Science./Law	71.9		75.4	74.5	74.8	72.2
Medicine	6.9		5.0	7.0	5.5	6.1
Engineering:	7.7		8.7	8.4	9.8	10.1
Agric	5.6		4.4	5.3	4.8	4.9
Admn. /Mgt	8.7		11.3	12.8	13.0	11.6
Polytechnics						
Applied Maths/Sc	29.8	36.7	33.3	30.8	28.5	29.7
Enginering	0.5	1.8	3.2	8.6	7.8	5.2
Mgt./Bus Studies	69.7	61.5	63.5	60.6	63.7	65.1
Total Fem as a % of Total Enrol:						
Poly	15.0	18.2	20.9	20.5	21.2	20.8
Univ.	24.0		26.5	24.5	26.2	26.6

Source: NCTE files

As shown in Table 4.1 female enrolment as percentage of total enrolment increased from 24% in the universities to 26.6% between 1994/95 and 1999/2000, while in the

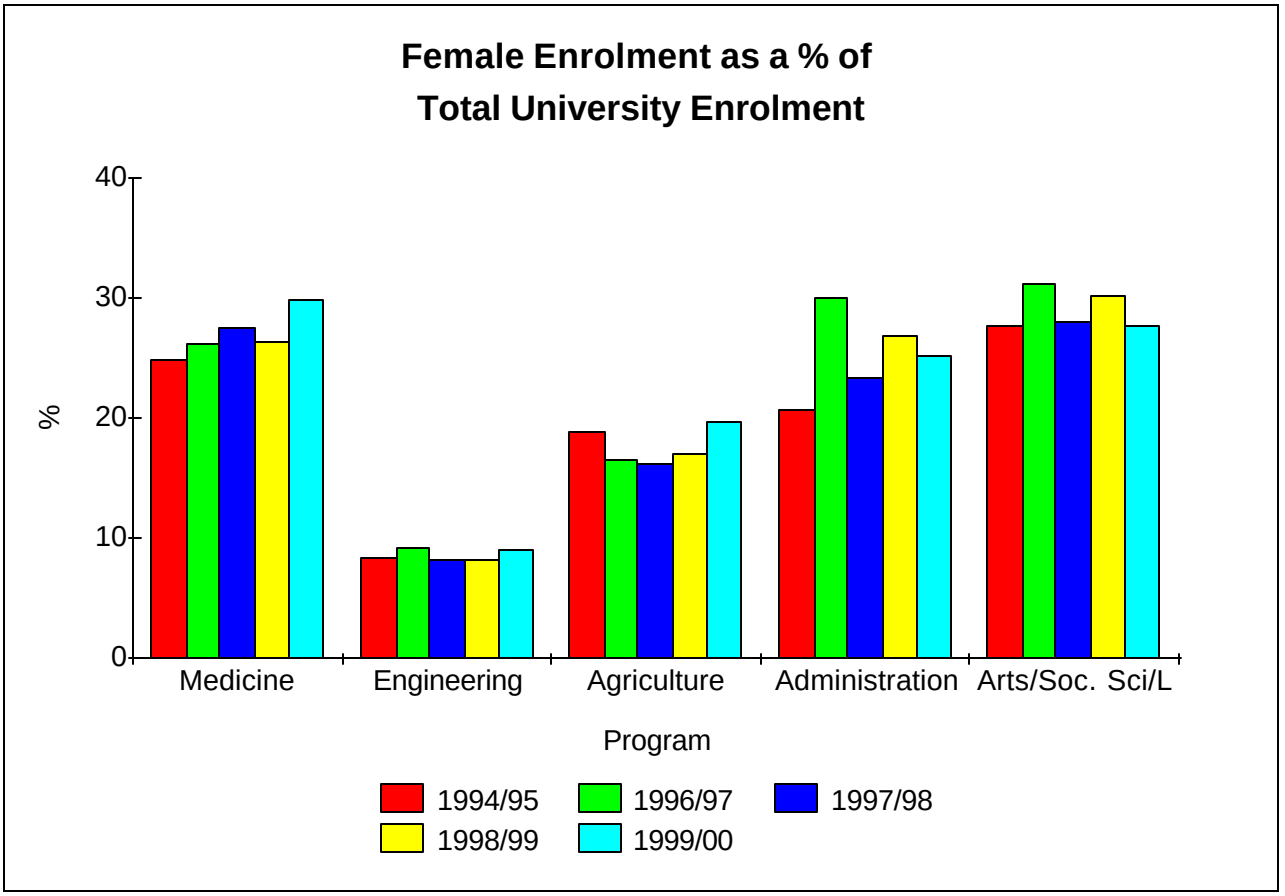
polytechnics it increased from 15% to 20.8% during the same period. In the polytechnics, the improvement in female representation in tertiary enrolment is largely accounted for by the increased enrolment into management and business studies programmes. The percentage of females in engineering in the polytechnics increased significantly, though this represented only a small proportion (5.2% in 1999/2000) of overall female enrolment, as shown in Fig 4.4.

Fig. 4.4.



In the universities, courses in the humanities, that is, Arts, Social Studies, and Law have the highest female representation with an average of 28.9% of total enrolments followed by Medicine (26.9%) and Administration (25.3%). Between 1994/95 and 1999/2000 female representation in enrolments in medicine and administration has improved significantly, as illustrated in Fig.4.5. However, in engineering female enrolment as a percentage of the total enrolment has been the lowest, at an average of 8.6%. This situation, which is unlike that in medicine, shows that females tend to focus on the biological sciences- in line with their social, nurturing role- rather the mathematical sciences in their SSS and other pre-university training and orientation.

Fig. 4.5



4.3 GRADUATE LABOUR SUPPLY AND DEMAND GAPS

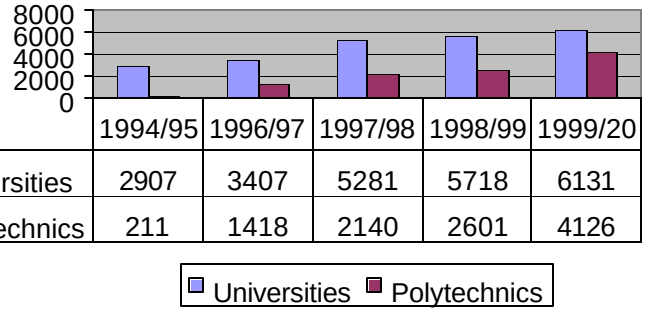
Two types of labour supply and demand gap may be identified, namely, the quantity gap and the quality gap. The **quantity gap** refers to the situation where the number produced by various programmes does not match (being greater for certain programmes and for others less than) the number required by employers, both public and private. The **quality gap** refers to the situation where the supply package does not appear to possess the competences expected by employers; in the sense that the performance of employees appointed on the basis of generally accepted credentials such as academic qualification falls short of the expected standard.

4.3.1. Quantity Gaps

In this section we shall look at the output of tertiary institutions, measured by the final year enrolment, and compare them with the estimated demand for tertiary graduates in the labour market, measured by the number of advertised vacancies that require at least HND qualification. Thus, in the analysis of quantity gaps we compare final year enrolment at the tertiary level to graduate job vacancies that require little (say, two years) or no job experience.

Total enrolment less the number of vacancies (N-D), in quantity terms, may be taken as a measure of the quantity gap, which could be positive indicating an excess or surplus, where N>D in which case tertiary output is observed to exceed the demand for such output. Where N<D output is less than the estimated demand, and a deficit in supply is said to exist. A positive gap, that is, an excess supply may be deemed undesirable, since it implies an addition to graduate unemployment. A negative gap may also be undesirable because it implies a shortage of graduate labour that could affect production levels and or labour costs.

Fig 4.6 Final Year Enrolment in Tertiary Institutions (1994/95-1999/2000)



	1994/95	1996/97	1997/98	1998/99	1999/20
Universities	2907	3407	5281	5718	6131
Polytechnics	211	1418	2140	2601	4126

Data Source: NCTE files.

Figure 4.6 shows the output of the universities and polytechnics during the period 1994/95 and 1999/2000. It is observed that final year enrolments in the universities more than doubled over the period, while the increase in final year enrolments in the polytechnics (HND programmes) was nearly fourfold between 1996/97 and 1999/2000. The growth in output was, however not equal among the various courses and programmes. The expansion in output was faster in business and management programmes, and arts and social sciences, and low in the sciences in general, as illustrated by Fig. 4.7.

4.3.1.1 Output by Course or Programme

In Fig 4.7 the notation, HNDEng refers to final year enrolment in HND engineering; HNDBus is final year enrolment in HND Business Studies; HNDAMS is final year enrolment in HND Applied Mathematics and Statistics; DegEng is final year enrolment in university engineering programmes; Medicine includes enrolment in Pharmacy; and, DegArts is final year enrolment in Arts, Social Sciences and Administration.

It may be observed that whilst degree engineering and medicine final year enrolment remained practically the same over the period 1994/95 and 1999/2000, HND Business and degree arts, social sciences, and administration had significant increases year by year. HND Applied Mathematics and Statistics also saw a significant increase during the period, mainly as a result of the high enrolment in institutional management courses.

HND engineering output also increased significantly, mainly because of the limited enrolment in university enrolment caused by lack of facilities such as laboratories and the desire of faculty to maintain quality delivery.

4.5.1.2 Estimating Demand-Supply Gaps in Tertiary Labour

In our attempt to estimate the quantity gaps four scenarios were constructed, namely:

1) Where central government demand is not considered, though we include demand by public agencies. Here, the quantity gap G is the difference between tertiary output (N) and the total number of advertised vacancies (V).[9] Thus G= N-V. Figure 4.8 illustrates the result, by courses.

2) Where central government demand for graduate labour is assumed to be 40% of tertiary output, and held constant annually.[10] Thus quantity gap G= N – (.4N + V).

3) Where central government demand and informal sector demand are assumed to be 40% and 10% of tertiary output respectively, which are held constant annually. Thus quantity gap G= N – (.4N + .1N +V).

4) Where central government demand and informal sector demand are assumed to be 40% and 10%, respectively, and a further 20% of tertiary graduates employed are assumed to find jobs through informal contacts rather than through public job advertisements. That is, for every four advertised vacancies, there is one vacancy that is filled using informal contacts. Thus quantity gap G= N – (.4N + .1N +.2V +V).

In Figure 4.8 University output is defined as the total final year enrolment; Demand refers to the total number of vacancies irrespective of years of experience required; and Demand2 refers to vacancies requiring two years of experience or less, which we presume are accessible to new graduate entrants. It is observed that university output of arts and social science graduates far outstrip the demand, however defined. University output also exceeds Demand in the case of agriculture, resource and environmental sciences. However, it is known that like the case of medical and health sciences the major source of demand for agriculture graduates is the central government. Engineering and administration output is found to be just comparable to Demand2, which means that there are a lot (about 50% of vacancies) of frictional shortages on the employers' side of the labour market, for these two disciplines.

[9] Advertised vacancies were used as a proxy for non-central government demand for graduate labour.

[10] Government demand includes estimated new graduate employment in the Civil Service and the Ghana Education Service.

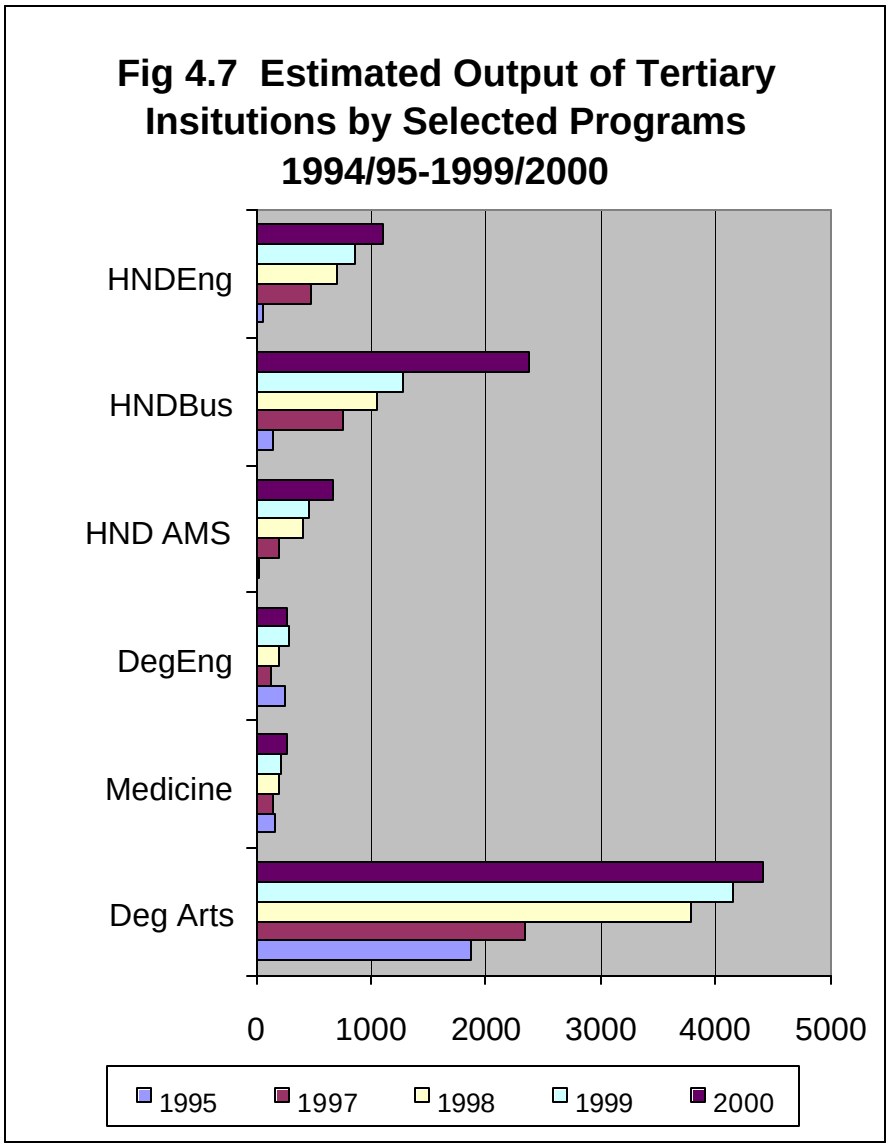
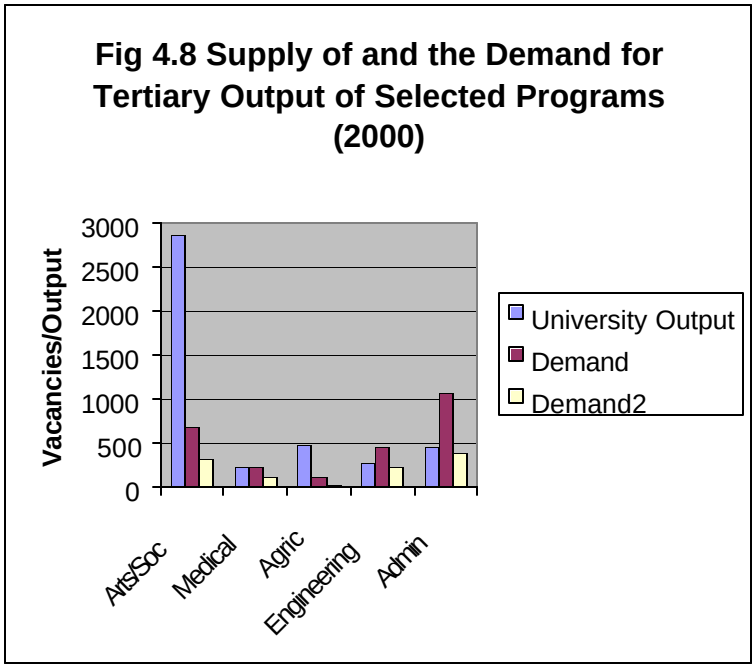


Fig 4.7 Estimated Output of Tertiary Insitutions by Selected Programs 1994/95-1999/2000
HNDEng
HNDBus
HND AMS
DegEng
Medicine
Deg Arts
0
1000
2000
3000
4000
5000
1995
1997
1998
1999
2000



Computer science courses, which are not shown in the figure, produce only about 30 percent of the number of such graduates required outside the central government in the year 2000, which was 138 positions that required two years of experience or less compared with the University of Ghana output of 49.

Table 4.2 shows the result of our attempt to estimate excess supply of graduates, or the deficit in supply, based on the four scenarios described earlier in this section. From Table 4.2 we observe that under Scenario 1, which ignores central government demand for graduate labour, administration (management and accounting), medical and health science, and engineering and technical science programmes are under-supplying the labour market, whilst the social sciences and agriculture are over-supplying.

Table 4.2

Estimates of Excess Supply of University Graduates in the Ghanaian Labour Market for Selected Courses, 1999-2000

Labour demand Scenarios	Arts/Social Sciences	Medical and Health	Engineering	Administration	Agriculture
Final Year Enrolment, N	2858	216	274	461	471
Less Vacancies outside Civil Service, V	143	100	137	291	19
Excess: Scenario 1	2715	116	137	170	452
Less Civil Service Demand	1143	216	110	184	188
Excess: Scenario2	1672	(100)	27	(14)	264
Less Informal Sector Demand (=0.1N)	286	22	27	46	47
Excess: Scenario3	1386	(122)	0	(50)	217
Less Informal Placement = (0.2V)	29	20	27	(58)	4
Excess; Scenario4	1357	(142)	(27)	(108)	213
Excess as a Ratio of final year enrolment	0.95 0.58 0.49 0.47	0.54 (0.46) (0.56) (0.66)	0.50 0.10 0.0 (0.10)	0.37 (0.03) (0.11) (0.23)	0.96 0.56 0.46 0.45

Note: It is assumed that civil service demand for medical and health graduates is 100% of tertiary output; for the other programmes a ratio of 40% is assumed. Figures in the last row (shaded gray) show excess in respect of the four scenarios in numerical order, i.e. excess under scenario 1 is the first figure in the cell; followed by that of scenario 2, etc. Final year enrolment (N) is for the year 1998/99, assumed to enter the labour market in 2000. Vacancies (V) include jobs requiring university degrees and two years of experience or less.

Source: Computed by authors.

We may summarize our findings as follows:

- There are deficits in the supply of medical and health, engineering and technical, and administration graduates
- The deficit in the supply of medical and health graduates is estimated at about 66% of current output.
- The deficit in the supply of engineering and technical graduates is estimated at 10% of the current output.
- The deficit in the supply of graduates in management and accounting is estimated to be about 23% of current output.
- The absorption of agriculture, resource and environmental science graduates will depend on central government demand, given that non-central government demand is only about 4% of current university output. Activities in this field, notably agricultural extension services, resource and environment tend to be of the "public-good" nature. Therefore, it is not surprising that non-government demand is relatively small, and employment should depend on the public sector.
- With non-central government demand at only 5% of university output, graduates in arts and the social sciences will continue to depend on the government sector for employment.

As far back as 1994 the UNDP reported the existence of skill shortages, which obviously still persist, in the following areas in the public sector:

- General management and administration,
- Financial management and accounting,
- Marketing, trade promotion, and development,
- Policy analysis and formulation, planning, implementation, monitoring and evaluation, and budgeting. [11]

In the private sector, the following skills have been found to be in short supply:

- Production and materials management,
- Accounting, financial management and auditing,
- Marketing,
- Information Management and Statistics,
- Civil, electrical, mechanical engineering,
- Human resource management.

4.3.2 Quality Gaps

Quality gap refers to the difference between supply of skills (not just nominal outputs) and the demand for them. The existence of this gap may be attributed to the lack of fit between what is taught in schools and what is needed on the job, and may therefore be linked to the issue of relevance, which is discussed in detail in Section 6.0. Skills demanded by employers are in this study measured in terms of job requirements, other than academic or professional qualifications. Thus, a quality gap exists when skills required are not matched by the stock of new labour market entrants or by the on-the-job performance of new recruits.

[11] UNDP (1994). Ghana Next Steps in Capacity Development and Utilisation for Accelerated Growth. Accra. January.

4.4 Relative Costs of Tertiary Programmes

According to Coombs and Hallak (1987), cost analysis of education is an essential tool for testing the economic feasibility of broad national education plans and of proposed innovations. Such analysis can help reveal possible advantages of re-deploying limited resources between competing wants. To rationalize the expansion of enrolment in certain programmes or the curtailment of others, we need to take a look at the cost aspects of the different courses and programmes. Unfortunately, no serious attempt has yet been made to estimate the costs of tertiary education in Ghana from the production side. The current practice of cost determination is based on norms developed by the NCTE, which basically looks at cost from the public finance perspective. Thus, it is difficult to undertake meaningful evaluation of the economies of scale or of scope. Currently the universities levy the following fees on students, which is supposed to be a fixed proportion of the public cost per student in the various disciplines, excluding tuition fees:

Table 4.3 Schedule of Fees at the University of Ghana, 2001/2002

Item	Humanities	Science & Agric	Medical/Dental
Academic Facilities	368000	529000	747,500
Other University Charges	134000	134000	134000
Residential fees	200000	200000	200000
Total	702000	863000	1081000

Source: University of Ghana, Finance office

The total cost per tertiary student in Ghana is perceived to be exorbitantly high in comparison with that in Asian or Latin American institutions, especially when seen as a ratio of per capita national income (The World Bank 1988). The problem is that the largest share of cost goes into non-teaching activities.

Following discussions with some faculty personnel, we are able to make the following observations.

Costs may be broken down into:

- Investment in fixed facilities, or fixed costs, and
- Operational (recurrent) expenditure costs.

Both the fixed and operational costs are highest in the physical and biological sciences, followed by administration and social sciences, and lowest in the arts. Following Table 4.3, if we assume a fixed percentage of actual cost of academic facilities are levied as fees, then courses in humanities cost about 50 percent and science and agriculture 71 percent, less that of medical and dental sciences. Studies on economies of scale in education have shown that generally costs decrease with the number enrolled. However, the cost function is usually of a hyperbolic form, such that cost per student rises steeply after a certain minimum point has been reached, which means also that there are limits to the economies derivable from enrolment expansion (Eicher, 1984). Cost decline also

come from age and experience: as the universities grow with age they would overcome some of the internal inefficiencies and focus on areas they have comparative advantage.

Other possible sources of cost reduction per student include:

1. **General Costs**

   a. Distance education- this may have the effect of cutting off residential costs, the bulk of which are borne by the public budget in terms of utility costs, building maintenance and repair. However, for science distance education appears to offer limited help, in the absence of laboratory facilities outside the tertiary institutions

   b. Introduction of tertiary skill training institutes, of a non-university nature

   c. Efficient use of resources through reduction in enroment in courses and programmes unrelated to national economic needs, minimization of administrative overheads and irrelevant academic activities, greater accountability, and output-related expenditures in the institutions

2. **Direct Programme/Course Costs**

   a. In general, faculty specialisation and rationalization could be introduced among the tertiary institutions, namely, each tertiary establishment should focus on specific areas or disciplines. For example, the Faculty of Agriculture at Legon could focus on the economics and management aspects, while KNUST focuses on the engineering and technical aspects and UCC on the extension. This would require some long-term planning, understanding and compromise among the institutions.

   b. Private sector financing of specific components of teaching or research, especially in the sciences and in post-graduate programmes.

   c. In the sciences: In view of the high fixed costs, in terms of laboratory facilities, etc., economies of scale could be achieved through sharing facilities among the tertiary institutions, in the short-run

   d. Restructuring professional programmes in the universities, like accounting, economics, and management, to accept students only after students have completed two years of university work.

4.5 Some Conclusions

It is clear that greater investment in facilities would be needed if enrolment in the science-based programmes in the universities and polytechnics has to be increased.

Though total enrolment has been increasing, access to courses considered relevant by prospective students, such as administration, economics, law and medicine, remains low. Access is constrained by a number of factors:

- Tertiary and training institutions are under-funded, especially polytechnics. This has implications not only for the quality of education but also ability of the institutions to absorb the increasing demand for education and training

- Limited space for students among tertiary institutions, in terms of classrooms, equipment and accommodation[12]
- Limited number of programmes, especially those deemed relevant by students in the current labour market, and lack of course diversification among the various disciplines; for example the Departments of Philosophy or Political Science could start a course in Income Distribution, Poverty and Development to enhance its attractiveness among students

In view of the high demand for graduates in engineering, the overall participation of females in professional jobs would be enhanced if female enrolment in that discipline were raised.

[12] Ghanaian post-elementary education is largely residential; hence enrolment is tied in with the availability of accommodation most of which is subsidized.

5.0 GRADUATE UNEMPLOYMENT

Graduate unemployment or "educated unemployment" increased sharply and, thus became a national issue in many countries across the globe in the early 1980s, particularly in developing economies. This rise was attributed to the sluggish growth in the aggregate demand for graduate labour and the diminished role of the public sector as its main employer (The World Bank, 1994). In Africa, the ILO has highlighted the issue in its African Employment Report (1990, 1992 and 1994), which indicated that about 33% of Africa's youth, mostly the educated youth, would be unemployed if deliberate action were not taken to create employment. The 1994 report mentioned the contraction of jobs in the formal sector and "distortions related to the development and utilization of human resources in the context of changing economic circumstances" as the major factors contributing to youth open unemployment, besides the high population growth rate (ILO, 1994:13). Many of the employers interviewed for this report attributed the problem to low government demand for graduate labour, low productivity of recent graduates, and lack of career counseling and guidance for students.

5.1 Evidence from GLSS

Estimates of unemployment by the Ghana Statistical Service based on GLSS data show that graduate unemployment is very low compared with public perception about the extent of the problem. As shown earlier in Table 2.2, unemployment is estimated to be below 1% for the overall labour force and negligible for university graduates in the 1988/89 and 1998/99 surveys. This low estimate is the result of the approach used to identify the unemployed, namely, "those actively seeking work but without work". In view of the general poverty and the absence of unemployment benefits open unemployment should be expected to be low in Ghana.

5.2 Evidence from Ministry of Education

The Ministry of Education commissioned a survey (or a tracer study) in 1996 to examine the labour market experience of workers who graduated from the Universities of Ghana, Legon, Cape Coast, and Science and Technology, Kumasi, between 1985 and 1994. The objective was to obtain a broad overview of the study programme, employment situation, occupation, and professional career of graduates.

The study found that about 71% of graduates sampled found work within 5 months of completing their national service; while among the remaining 29% some took more than a year. However, the average waiting period before first appointment declined with succeeding cohorts. The majority of graduates (61%) were employed in the public services, and only 3% in large companies. About 15% had refused jobs because of low salary or a mismatch with their training. Generally, the unemployed among them were the most recent graduates and those who were unwilling to consider jobs in teaching, or farming. Though some had considered self-employment they felt constrained by lack of capital, and were willing to wait for jobs in the public sector.

5.3 Evidence from Ministry of Manpower Development and Employment

In view of the general lack of information about the dynamics of unemployment among Ghanaian graduates, the MMDE made an attempt to register unemployed graduates in

the country in March 1999, with the further aim of providing some interventions to mitigate the problem. Only the regional capitals were covered in the survey. [13] The study found that over 35% of unemployed university graduates and 20% of unemployed tertiary graduates in 1998 were those with social science background. Compared with their share of total enrolment, which has been at an average of 60%, the proportion of social science graduates in the population of unemployed tertiary graduates is relatively low, and shows that social science graduates, perhaps, are flexible enough in their job demands to avoid unemployment.

In terms of demography, out of the 651 unemployed graduates who were registered, 91% were males and 9% females; 85.8% were between the ages of 20 and 30 years; and 73.3% were single. About 31.7%, who were previously employed, had lost their jobs through divestiture or redeployment. In terms of jobless duration, about 67.8% of the sample had been unemployed for about one year, and only 16.9% were fresh graduates who had just completed their national service. Over 65% of respondents were indifferent between wage and self-employment, and 21% preferred wage employment. The study noted that about 98% of respondents said they would need financial and entrepreneurial assistance in order to start a new business. The report concluded that graduate unemployment in Ghana is a "critical problem".[14]

Vandermoortele (1991) has provided some comparative unemployment figures for a selected number of African countries, shown in Table 5.1, which reveals that the incidence of unemployment among graduates is generally lower than that of the overall population.

Table 5.1 Unemployment Rates in Selected African Countries (%)

Country	Year	Overall Unemployment	Tertiary Graduate Unemployment
Cote d'Ivoire	1985	3.7	13.7
Ghana	1987/88	5.5	14.7
Ethiopia	1984	10.5	4.4
Kenya	1986	16.2	5.4
Mauritius	1983	22.8	13.2
Nigeria	1985	9.7	5.2

Source: Jan Vandermoortele (1991). Table 5, page 21.

5.4 Employment Expectations of Graduating Students

A major factor underlying the incidence and duration of unemployment among tertiary graduates is the kind of job and salary expectations these graduates have before graduation. Expectations play a key role in the demand for education in general, and in particular, the demand for particular courses and programmes. However, most graduates

[13] The Ministry of Manpower Development and Employment repeated this exercise in 2001, covering the district capitals, as well.
[14] MESW (1999) page 24.

are not adequately informed about the current labour market situation, as the study by Boateng and Bekoe (2001) has shown.

Tertiary graduates usually expect to get high status jobs and good incomes after graduation. This expectation is rational from the perspective of human capital theory, which explains that the main determinant of the demand for higher education is the expectation of higher earnings over the individual's lifetime.

At the theoretical level, higher earnings are necessary to compensate for the higher costs associated with higher education. Those with more education have shorter working life because of time spent in school, and therefore require higher earnings to recover costs. Furthermore, the differences in earnings should be sufficiently large to ensure a significant gap between the net returns from the different levels of education. At the empirical level, in the past tertiary graduates had been favoured with generous conditions of service such as subsidised executive accommodation and transport. Recent graduates, perhaps ignoring the present realities in the labour market, assume that the historical relativities would continue.

Using primary data collected from a sample of (460) final year students at the University Ghana in May 2000, Boateng and Bekoe (2001) have found a wide divergence between current offered wages and the wages university students expect upon graduation. Over 84% of those interviewed expected wages significantly higher than the current wage offered by the sectors in which the students indicated they prefer to work. The study also showed significant differences in wage expectations among university students in terms of factors such as gender, course of study, and the future educational goals of the student, as shown in Table 5.2.

Wage expectations were not statistically different among age groups; but they were among courses, educational goals of students, and the place of work preferred by the student. From Table 5.2 we find that there is a statistically significant difference in the means of annual wages expected by those in humanities (¢9.52m) and that for the sciences (¢3.18m). This difference may be attributed to the greater tendency towards affluent living that is typical among students in the humanities than found among those in sciences, as the latter group has less time for extra-curricula activities than the former group of students. Another source is the fact that a large proportion of students in the humanities expect to find jobs in the private sector where wages are generally higher than in the public sector.

Students, who expressed interest in graduate studies immediately after school, had a lower expected wages than those who preferred to work after first degree. The results of the test of equality of expected wages show that the mean of the expected wage (¢17.81m) for those who do not want to pursue postgraduate degrees is significantly higher than that of those who want postgraduate degrees (¢4.35m). This result appears to be influenced by the fact that those who want to work now rather than pursue postgraduate degrees have higher expectations concerning current wages, hence their intention to work now. In contrast, those who intend to pursue postgraduate degrees appear to perceive current wages to be low, hence their intention to obtain postgraduate degrees that will boost their incomes in the future.

Table 5.2 Tests of equality of means of Expected Salary

Variables	Number of students	Mean of expected salary per annum (¢ml)	T-statistic
Age			
Age= 25 years	194	7.652 (5.332)	
Age > 25 years	267	7.606 (4.379)	0.013
Major Course			
Humanities	366	9.516 (5.45)	
Sciences	88	3.180 (1.829)	3,673***
Educational Goals			
Graduate Level	229	17.814 (6.228)	
Postgraduate Level	210	4.349(2.426)	2.291***
Preferred place of work			
Public sector	352	5.883 (3.808)	
Private sector	100	20.635 (7.635)	-1.518*

+Standard deviations are shown in parenthesis. *** Significant at 1%; ** significant at 5%; * significant at 10%.

Source: Adapted from Boateng and Bekoe (2001) Table 2.

From Table 5.2 we also observe that the means of expected wage for those who prefer work in the private sector (at ¢20.64m) far exceeds that of those who prefer work in the public sector (at ¢5.88m). It is also observed that there are wide differences in individual expectations, as indicated by the coefficient of variation, which is 39.6% for those intending to work in private sector compared with 46.5% for those who prefer public employment. This implies that students know that the level of wages in the private sector is higher than in the public sector, and, secondly, they know that wages are more unequally distributed in the private sector than in the public sector.

Boateng and Bekoe (2001) also attempted to find out how the expected wages of graduating students compared with the actual offered wage, in order to determine the types of students who are more likely to over-estimate their wages. Table 5.3 shows the offered wage for 7 institutions that were visited, which indicate that offered wages range from ¢3.6m per annum in the civil service to an average of ¢10.8m per annum in the private financial institutions.

Table 5.3 Actual Starting salary for New Graduate Recruits

INSTITUTION	Salary per annum (as at May 2000)
Public Services	¢ 3,600,000
S.S.N.I.T	¢ 10,800,000
Universities & Research Inst.	¢ 5,400,000
Financial Institutions	¢ 14,400,000
Utilities	¢ 9,600,000
Revenues/Immigration Service	¢ 5,400,000
Private Commercial Sector	¢ 7,200,000

Source: Boateng and Bekoe (2001). Table 3.

All other things being equal the probability that a new graduate will be employed will be lower if expected wage is greater than the offered wage. Table 5.4 shows the percentage of students sampled that over-estimated their wages, according to various sub-groupings, that is, by gender, age, and course of study.

Table 5.4 Offered-Expected Wage Differentials

Demographic Characteristics	% of respondents whose expected wages exceeded the offered wage	Coefficient of Representation
By Gender		
Male	84.7	1.16
Female	83.3	0.98
By course		
Arts	80.0	0.93
Social Science	88.1	1.30
Law	100.0	1.12
Administration	75.4	0.88
Science	80.2	0.33
Total	**84.3**	**1.00**

Source: Adapted from Boateng and Bekoe (2001) Table 4.

The coefficient of representation reported in Table 5.4 for each sub-group of students indicates the ratio of the percentage of a subgroup in the sample of those who did over-estimate their wages to the percentage of that sup-group in the overall sample. If the coefficient of representation for a sub-group is greater than one, the sub-group is said to

be over-represented in the sample of those who over-estimated their wages; when it is less than one, then the group is said to be under-represented.

From Table 5.4 it is observed that over 84 percent (381 out of 452) of students sampled over-estimated their wages, that is, when the wage rate expected by the student was compared with the wage currently being offered by the place of work preferred by the student. A greater percentage of male students (84.7%) than females (83.3%) over-estimated their wages. A rather more interesting result is that students in law and the social sciences were the most likely to over-estimate their wages, as indicated by the coefficients of representation. The problem is that the majority of them prefer to work in the banks, but apparently they do not know exactly what banks pay, since salary structures of financial institutions are often kept out of public view.

5.5 Alternative Employment Opportunities for Unemployed Graduates

GLSS data show that an increasing proportion of graduates may be found in the public sector. However, with the restructuring currently going on employment in the public sector is more likely to be restricted to certain key disciplines- in policy divisions of- key ministries, notably finance, and local government. The increasing number of new graduates in the arts, especially, would have to find alternative employment in other sectors, notably NGO and in self-employment.

There are two key constraints when looking at self-employment as an alternative source of employment, namely: entrepreneurial skills and start-up capital. Beyond these factors is the problem of employment preferences: how to change preferences from public to the private sector, in particular, small-scale industry. This would require removal of institutional barriers against private sector operators; altering compensation systems and the general conditions of service including rigid employment protection schemes in the public sector; and attitudinal changes.

The Boateng and Bekoe (2001) study found that about 78 percent of students want jobs in the public sector, and only twenty-two percent indicated preference for the private sector jobs (including self-employment), when in fact the public sector employs less than 40% of new graduates. This means that any policy to motivate graduates towards self-employment must deal with the employment preference structures of graduates. This will require strengthening career-counseling programmes in tertiary institutions.

6.0 RELEVANCE AND QUALITY OF TERTIARY EDUCATION

"Relevance" in the ordinary sense means, applicability, relatedness, connection, pertinence or congruity. "Relevance" has two dimensions, namely, the quantity dimension, that is, the match between aggregate supply and demand; and the quality dimension, that is, the match between the demand and supply of particular skills and attributes. The issue of quantity was addressed in section 3 and 4. We now turn to the issue of quality.

The issue of relevance (in terms of quality) of university and for that matter tertiary education is not new or unique to Ghana. In 1996, Abbott wrote, concerning American college education, "we continue to get graduates who think narrowly, are teacher-dependent, and who have too little ability to tackle challenges or embrace change". [15]

Evaluation of the relevance of tertiary education in Ghana is important for a number of reasons. These include the fact that "relevance" is a contributing factor to the perceived high incidence and duration of unemployment among graduates. "Relevance" also has an effect on the potential productivity of graduates and, hence, the demand for their services and their overall contribution to growth and development of the country. The issue of relevance is also important for the analysis of tertiary education financing. If the education students receive is considered "irrelevant" should they be asked to pay or make any contribution towards it, or should the public invest in it at all?

We need at this stage to look at the concept of "relevance": what is the definition of "relevance of education"? Basically, we can talk of relevance at two broad levels, namely, relevance in the global or general context, and relevance in the context of immediate labour market needs.

6.1 Relevance in the general context

Social activists usually argue that education is not only beneficial to the individual but also to the society as a whole, and that the value of education cannot be simply measured by the returns to the individual in terms of employment and earnings. In this context, education has a multi-dimensional relevance, to the extent that they help one individual perform some social, not necessarily economic, function more efficiently than another individual who does not have such education. Thus, for example, a tertiary graduate may be thought of as more capable of making right political or social choices than someone who has no such education. In this sense education is relevant so long as it adds to the ability of a person to read and write better English, and to utilize a larger set of parameters in his or her thought process, whether or not such ability adds value to any marketable good or service. Education in this context is a demographic label that differentiates the "lettered" from the "unlettered".

In the economic context, relevance is an issue where educational institutions and their products are affected by the "diploma disease" and are concerned with "certification" and "credentialism" than with conveying employable knowledge and real skills, and where products cannot find occupations for which they are supposedly trained to engage in.

In this study we focus on the economic, in particular the labour market relevance of education.

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[15] John Abbott (1996). "The Search for Next-Century Learning." Wingspread Journal, 8(3):4.

6.2 Relevance of Tertiary Education to the labour market

We may look further at the issue of labour market relevance of tertiary education from two perspectives, namely, 1) Employers' opinion based on skill requirements relative to the skill attainments of educational output; and 2) Technical or experts' opinion, based on structure, content, and delivery of programmes and courses.

6.3 Employers assessment and perception about quality of recent graduate entrants in the labour market

In this study the approach used to ascertain employers' perception about the quality of recent tertiary graduates was two-fold, namely, the macro approach through the interview of policy makers in the labour market, and the micro approach through the interview of human resource managers at the enterprise level. Different questionnaires were used, and the interview strategy was different. With the policy makers direct interview approach was used, while with the human resource managers self-administered questionnaires were used.

In general the views of the policy makers, that is, the macro perceptions about the quality of graduate labour in Ghana varied with the micro perceptions. In the statistical perspective, one could attribute the difference in the results to the small size of the sample used, which in theory could have reduced its unbiased-ness and efficiency. But at the practical level, the difference could be due to effective screening of graduate applicants before employment.

6.3.1 (Macro) Perception of Policy Makers

From interviews with policy makers and labour administrators in Ghana we made the following general observations.

- The quality of tertiary output is falling. Definitions of quality, which differed among those interviewed, include: ability to do independent work; ability to appreciate tasks; ability to communicate well in English language; having good perception of quality output; and knowledge of the economy.
- Recent graduates lack the basic skills to complete simple routine assignments, which gives the impression that certification is a mere formality rather an indication of achievement.
- Recent graduates take too long to learn their job and responsibilities, and appear to be too mechanical in thinking
- Employers usually spend months trying to identify the required graduate personnel, and sometimes fail to find them after months of searching. One development NGO that wanted four researchers and advertised the vacancy in the daily newspapers received over 300 applications. Since none of the applicants was well qualified for the position the organization decided to select eight of them for a training workshop where the best four were eventually appointed.
- Several graduates apply for jobs they are not qualified or trained for, which makes screening process too long and cumbersome
- Several applicants who queue up for interviews fail to impress.

6.3.2 (Micro) Perception of Human Resource Managers

Questionnaires, covering all major tertiary disciplines, namely Management, Accounting, Banking, Insurance and Finance; Economics, Law and other Social Sciences; Computer & Information Technology; Engineering & other Physical Sciences; Agriculture, Natural Resources and Environmental Sciences, were sent to twelve establishments out of which seven responded. Our findings are summarized below.

6.3.2.1 Performance of Graduates Intra and Internationally

The responses from the firms indicated that generally, the performance of recent graduates on the job is satisfactory. 14.3% of employers surveyed rated the performance of recent graduates at the work place vis-a-vis past standards as excellent; 57.1% thought it is just as good; and 28.6% of employers rated them as fair. 71.4% of employers indicated that the performance of local graduates is as good and 28% graded it as fair, compared with graduates from abroad.

6.3.2.2 Employers' Perception about Skills and Personal Attributes of Graduates

On average, employers perceived managerial and technical skills as most critical to the performance of new graduate entrants followed by computer and analytical skills; whilst general skills were considered as less critical. The breakdown shows that while managerial and technical skills are considered most critical to new graduate entrants in the areas of agriculture, engineering and computer science, managerial, technical, computer and analytical skills are perceived to be equally critical to graduates in social sciences and accounting. In contrast, skills in communication were thought to be most critical for graduate entrants in management (Table 6.1).

Table 6.1.
Skills and Competencies considered most critical to the performance of graduate entrants (% of employers interviewed)

	General Skills	Computer & Analytical skills	Managerial & Technical Skills	Communication Skills	Personal Attributes
Management	9.1	9.1	18.2	27.3	36.4
Accounting/ Finance, etc.	10	30	30	20	10
Econ/Law/Other Soc. Sci.		40	40	20	
Computer/ Info. Tech.		20	60		20
Engineering etc		20	60	20	
Agriculture	20	20	40		20
Average	6.5	23.2	41.4	14.5	14.4

Source: Survey by authors

On average 21% of employers described the performance of recent graduates as very good, 59% as satisfactory and 20% as poor. However, in terms of managerial and technical skills considered critical to the performance of their jobs 43% of employers rated recent graduates as poor or inadequate (Table 6.2).

Table 6.2:
Performance of Recent Graduates in terms of Competence & Skills (%)

	Very Good	Satisfactory	Poor/ Inadequate
General Skills (K'dge of job)		85.7	14.3
Computer & Analytical skills	16.7	66.7	16.6
Managerial & Technical skills	28.6	28.6	42.8
Communication Skills	42.8	35.7	21.5
Personal Attributes		80.9	19.1
Language/Not English	37.5	50	12.5
Average	20.6	59.5	19.9

Survey: Survey by authors

6.3.2.3 Pre-Employment Screening

The proportion of applicants for advertised jobs who qualified for interview was estimated on average at 74% out of which 24% were given employment. This puts the proportion of applicants who successfully went through the process at 17%. It was better in the area of engineering where all applicants qualified for interview out of which 67% got the job**.** 79.2% of employers interviewed regard the performance of applicants at interviews vis-a-vis academic achievements as good. The performance of applicants in the areas of accounting, social science, computer, and engineering at interview totally confirmed their academic achievement. 72% of employers claimed that performance of new appointees on the job confirmed the potentials exhibited during pre-employment interview. All employers interviewed claimed that candidates at interviews showed adequate knowledge of their own fields but only 54.3% and 69.3% agreed that applicants showed sufficient general knowledge of issues in the industry and in the country, respectively. Applicants in the areas of accounting, management and social sciences were perceived to lack general knowledge.

6.3.2.4 Job Vacancies

Job vacancies were found to exist in the middle level, estimated at 49% compared with top-level vacancies of 46%. Only about 6% of employers said they had vacancies for recent graduates. Poor remuneration and working conditions were observed as the major reasons for the existence of vacancies at various levels. In the case of engineering and computer science, the major reason for unfilled vacancies was lack of qualified applicants. (Table 6.3)

Table 6.3:
Vacancies by Course of Study

Discipline	TOP LEVEL	MIDDLE LEVEL	LOWER LEVEL	TOTAL
Management	2	5		7 (20.0)
Accounting Finance etc	4	3	2	9 (25.7)
Econ, Law, etc.	1			1 (2.8)
Computing	2	2		4 (11.4)
Engineering	6	6		12 (34.3)
Agriculture		1		1 (2.8)
TOTAL (% of total)	16 (45.7)	17 (48.6)	2 95.7)	35 (100.0)

Note: 'Top Level" refers to jobs requiring advanced degrees and or several years of experience; "middle level" refers to jobs requiring degrees with up to 5 years of experience; and "lower level" jobs refers to jobs requiring degrees or diplomas with two or less years of experience.
Source: Survey by authors

To minimize the cost of hiring and improve the job performance of new graduate employees, some employers have adopted new approaches, such as:

- Emphasizing skills more than educational attainment or occupational longevity

  It was observed that the demand for non-academic competencies or specific skills has been increasing at all occupational levels while educational attainments are omitted from the adverts.

- Establishing longer orientation and probation period

  In addition to interviews, aptitude tests, vetting and verification of certificates and referees' evaluations, some employers take prospective employees through longer orientation and probation schemes after which the best performing candidates are selected

- Developing competent human resource managers to help train new recruits

- At the macro level some business associations like the Ghana Employers Association and the Association of Ghanaian Industries are considering plans to strengthen job attachments schemes for tertiary students and faculty members.

6.4 Expert view

There are two main aspects of the issue of relevance and quality from a technical perspective, namely, content and delivery. We can also look at the issue of content from two angles, namely, time relevance of concepts and methodologies, and structural relevance of contents in terms of interconnectedness of concepts and methodologies. Time relevance of content relates to the currency or up-to-datedness of topics treated in the various courses offered under a given programme. For example, a course in development economics that devotes greater attention to import-substitution industrialization to the neglect of globalisation and international competitiveness of the national economy, could be described as time irrelevant.

In many tertiary programmes, subjects currently offered and studied more or less mirror the overall pattern of the past- and course outlines and recommended textbooks have not changed significantly in the past several years. Curriculum review is not regularly undertaken.

Delivery relates to the overall objectives of the course or programme and the instruments used to achieve those objectives. Teaching and learning approaches have remained the same, spoon-feeding and rot learning approach. There is little interaction between faculty and students both inside and outside the classroom, and emphasis is on teaching rather than on learning. Few internships and vacation job attachments to provide students and faculty alike, insight into the real world of work, largely because of slack in employment growth in the formal sector.

Based on sample of course outlines from the various universities of Ghana, it is observed that, curricula usually do not define by clear statements the intended outcomes of the courses, and course outlines usually do not show the learning objectives. There are not clear indications as to the possibility of matching the career interests of students and those of faculty in the sense of matching technical requirements of the courses with capabilities and needs of students and employers. Due to resource (computing and science laboratories, for example) limitations students have very little chance of practicing what they have been taught in theory.

For example, Level 400 Economics major students in Econometrics at the University of Ghana are required technically to cover most of the topics in Johnston (1984). However, unlike their counterparts in advanced countries such as UK, Canada or USA, economics graduates in Ghana do not get exposure to computers to be able to apply the theory they have learnt. Thus, they tend to be short of the grasp necessary for quality performance on their first jobs.

Casual examination of the course structures among certain disciplines in the universities of Ghana and some universities abroad indicate close similarities, as illustrated in Appendix Table 9, which compares current economics programmes at the University of Ghana, London School of Economics (UK), Dalhousie University (Canada), Rutgers University (USA). It is noted however that the difference is in the delivery and access to learning facilities, not so much in course outlines.

The predominant method of teaching in Ghanaian tertiary institutions is the lecture and note taking approach. Participation by students in the course of a lecture is limited. In view of the size of many classes questions are rarely entertained, and students have no easy access to the faculty, who appear to be already overloaded. Few faculty members maintain a regular schedule of meetings with their students.

Furthermore, the method of evaluation is basically by written examination, which emphasizes on rote knowledge of content, rather than on the processes of thinking, learning and questioning. Very few departments give term papers, thus writing skills are not tested and therefore cannot be improved. Graduation simply means accumulating credits rather than purposeful knowledge.

Many faculty members attribute the declining quality largely to the increasing class size, which makes it difficult to provide individual attention, and give assignments on regular basis. Many studies elsewhere have shown that there exists a negative relationship between class size and the quality of performance of students (Duraisamy et al, 1997). There is also the macroeconomic aspect: declining purchasing power of faculty earnings due to high levels of inflation, and shortage of foreign exchange to purchase needed instructional material and equipment. This appears to be the source of the crisis in tertiary education not only in Ghana, but in the developing world as a whole (Ransom et al. 1993).

6.5 What the Universities Are Doing to Improve Relevance

A major approach to dealing with the problem of education relevance is to create new courses and programmes and transform existing ones. To improve quality and relevance of tertiary education, some institutions have initiated and are implementing new programmes and courses, usually in collaboration with both local and international organizations in the design and delivery of courses, particularly at the postgraduate level. A notable example is the collaborative MA/MPhil Economics with the African Economic Research Consortium (AERC) and the MA Economic Policy Management Programme with the African Capacity Building Foundation and the World Bank, under the Joint Japan-World Bank Postgraduate Scholarship Programme. Programme objectives were developed between sponsors and the university; and funds provided for the acquisition and improvement of computing, learning and other facilities.

Another example is the Certificate and Diploma in Labour Studies programme at the University of Cape Coast, sponsored by the Ghana Trades Union Congress with some external support. In the 2001/2002 academic year, the University of Ghana approved a joint postgraduate diploma programme in Port and Shipping Administration with the Ghana Maritime Academy to be hosted and managed by Academy at Tema. Executive MBA programmes have been introduced at the University of Ghana and at GIMPA.

The universities are also establishing specialty research institutes and faculty-based research centres, which draw resources from public sector as well as external organisations.[16] This is an area where industry could provide support.

BOX 6.1. KNUST TO TEACH HERBAL MEDICINE

[16] See for example the University of Ghana (1994) Vision 2000 Plus Document, which is currently being reviewed. At a review meeting held at Akosombo in November 2000, the Vice-Chancellor of the university advocated for the scrapping of some departments and the merging of others. (University of Ghana Campus Update, November 30, 2000).

The School of Medical Sciences of the Kwame Nkrumah University of Science and Technology in collaboration with the Faculty of Pharmacy is working towards a four-year degree programme, which will lead to a B.Sc. Honours in Herbal Medicine, next academic year…

Prof. George Wereko-Brobbey, Dean of the School made this known at the Eighth Swearing in ceremony of new doctors in Kumasi at the weekend…

The Deputy Minister of Health said the distribution of doctors in the sector, which is in favour of the urban population, should not be allowed to continue. He said nearly 75 percent of doctors in the public sector were in the Greater Accra and Ashanti Regions. He said Ashanti alone had three-and-a-half times the number of doctors in the whole of Nothern, Upper East and Upper West regions put together...

Mr. Baah expressed regret that specialized training in the country, which is aimed at developing skills to meet local needs, tends rather to train the specialists for the international market.

Daily Graphic. Metro News. August 7, 2000, page 14.

6.6 University-Industry Interactions

From the employer interviews it is observed that generally, university–business interaction has been lukewarm. While some employers claimed that the quality of recent graduates is on the decline, they have failed to draw the attention of educational institutions to the issue. In spite of the fact that 85.7% claimed that they have had interaction with tertiary education institutions in Ghana at least on yearly basis, only 24.6% of employers claimed that they had through some informal way drawn the attention of educational institutions to the falling standards of graduates. Although none of the firms interviewed had ever participated in a forum on the discussion of the issue of the quality of tertiary education in Ghana, 28% indicated their intention to link up with educational institutions in the near future for that purpose.

The results gathered from the employers indicate that the university–business interaction has been focused on student vacation attachment followed by national service programme. Open scholarship to private individuals, job advisory and curriculum development has been given low attention.

Most of the interviewees who have had interaction with the educational institutions would still like to focus much of their attention on student attachment followed by job advisory. Other areas including donation to specific programmes, scholarships to selected groups as well as national service programme could get but lower focus.

Employers believe that four of the most effective forms of cooperation between tertiary institutions and industry for improving quality of tertiary education include:

- Curriculum development,
- Student attachment or vacation jobs
- Funded research
- Employment or job advisory; and to a lesser extent
    - Donation to specific funds and programmes,
    - Faculty attachment, and

- Representation on boards and committees.

The majority of employers interviewed felt that higher education is an area that needed technical people to handle not just entrepreneurs. Secondly, the approach to education issues is time consuming and much unlike that of industry; thus, the presence of industry on boards and committee might add little value to the deliberations of such bodies.

6.7 Some Conclusions

Employers want workers who are already made to perform, because markets are becoming more competitive and because the cost of on-the-job training is becoming prohibitive.

About 50% of all jobs requiring university education and 30% of all jobs requiring at least polytechnic diploma, also require computing and analytical skills.

According to employers interviewed the main areas of skill shortage, which needs government attention, include:

- Information technology
- Engineering
- Office management
- Human resource management
- Entrepreneurial and leadership training

Flexibility in decision-making and management authority is imperative in tertiary institutions if these institutions are to meet the needs of the labour market, in particular the needs of the private sector.

Macroeconomic factors have contributed to the declining quality of tertiary education: slow growth of the economy and, in particular foreign exchange shortages have curtailed purchases of instructional materials and critical teaching and laboratory equipment. Decline in the purchasing power of faculty has led to high turnover, and reduced attention to students.

To improve relevance and quality of tertiary education, both micro and macro factors should be considered:

- Quality of teaching could be improved through recruitment of quality staff, exposure of faculty to “practice” in the real world, well-designed quality control mechanisms, and improved remuneration. External support may be sought for the use of fixed-term international faculty and for direct faculty development
- Improving governance and financial accountability in the universities to attract private sector financial support.

Box 6.2 An Integrated Strategy for Improving Quality of Higher Education

In Singapore, a country which recognised that only a highly skilled and trained people could generate the ideas and innovative approaches which would allow it to prosper in a competitive and technology-driven world market, quality higher education has been ensured through an integrated strategy of:

- Merit-based student admission
- Matching student numbers with adequate state support and institutional capacity
- Recruiting high quality staff and providing generous incentives to high performers
- Maintaining a high staff-student ratio with small group taeching
- Probiding staff development with particular emphasis on teaching/learning techniques and enhancing their knowledge base
- Implementing student and peer review of teaching
- Improving student learning techniques. And
- Monitoring academic performance through an external examination system.

Source: Selvaratnam (1994).

7.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary of Findings and Conclusions

- **Tertiary enrolments**

Total enrolment has been increasing substantially, year by year. However, access to courses considered relevant by prospective students, such as administration, economics, law and medicine, remains low. Access is constrained by a number of factors:

- Tertiary and training institutions are under-funded, especially polytechnics. This has implications not only for the quality of education but also ability of the institutions to absorb the increasing demand for education and training
- Limited space for students among tertiary institutions, in terms of classrooms, equipment and accommodation.
- Limited number of programmes, especially those deemed relevant by students in the current labour market, and lack of course diversification among the various disciplines; for example the Departments of Philosophy or Political Science could start a course in Income Distribution, Poverty and Development to enhance its attractiveness among students

Greater investment in facilities would be needed if enrolment in the science-based programmes in the universities and polytechnics has to be increased.

The demand for tertiary education is pushed by the knowledge that it is necessary for obtaining employment in the formal sector, where wages appear to be higher and jobs more stable.

- **Demand-Supply Gaps in Graduate Output**
    - There are deficits in the supply of medical and health, engineering and technical, and administration graduates
    - The deficit in the supply of medical and health graduates is estimated at about 66% of current output.
    - The deficit in the supply of engineering and technical graduates is estimated at 10% of the current output.
    - The deficit in the supply of graduates in management and accounting is estimated to be about 23% of current output.
    - The absorption of agriculture, resource and environmental science graduates will depend on central government demand, given that non-central government demand is only about 4% of current university output. Activities in this field, notably agricultural extension services, resource and environment tend to be of the "public-good" nature. Therefore, it is not surprising that non-government demand is relatively small, and employment should depend on the public sector.
    - With non-central government demand at only 5% of university output, graduates in arts and the social sciences will continue to depend on the government sector for employment.

Thus the issue of over-supply of tertiary graduates may be described as an issue of supply mix, that is, supply-demand mismatch. The issue of supply-demand mismatch has implications for graduate unemployment and for the magnitude of returns to public investment in tertiary education.

- **Female Enrolment**

Female enrolment as percentage of total enrolment increased from 24% in the universities to 26.6% between 1994/95 and 1999/2000, while in the polytechnics it increased from 15% to 20.8% during the same period. The increase is accounted for by increases in enrolment in the traditional areas- arts and social sciences, and management. More needs to be done in the physical sciences.

- **Graduate Unemployment**

There are two major contributors to graduate unemployment:
-The mismatch between supply (by programmes and courses) and the demand
-The mismatch between the expectations of graduates (to get stable, high-paying jobs in the formal sector) and what the market is currently supplying.

- **Quality of Tertiary Graduates**

At the macro level the general impression is that the quality of tertiary education in Ghana has declined. At the enterprise level, the performance of recent graduates is perceived to be satisfactory. The underlying reason for the difference may be the effective screening procedures used by formal sector establishments in their recruitment or the fact that due to lack of space only the top cream of SSS graduates are admitted into tertiary institutions these days.

Based on a comparison of job requirements (reflected in advertised vacancies) and the structure and mode of delivery of academic curricula, we can conclude that many graduates enter the labour market without the required skills.

Curriculum delivery is affected by many factors, both micro- limited teaching and learning facilities, etc.- and macro- declining purchasing power and inadequate compensation of faculty.

To improve teaching delivery and enhance access to tertiary education, as a national objective, new sources of funding in general and cost sharing in particular cannot be postponed further.

The **main challenges** for correcting supply-demand gaps in tertiary output include:

- **Policy Design and Formulation**

Formulation of an education and manpower policy aimed at equalizing the demand and supply of graduate labour, in a dynamic environment, and driven by the demands of the national labour market and the global economy, as well as the traditional objectives of social and political development of the country.

- **Institutional Framework**

Formulation of an integrated tertiary admissions and human resource development framework that incorporates existing education and manpower goals of the economy, which will ensure effective monitoring and control of enrolments, curriculum design and delivery; and harmonize not only admission rules and quota determination for various institutions, but also the quantity and quality aspects of tertiary output.

- **Labour Market Reform**

Restructuring not only the compensation systems in the public sector, but also the labour market information and career counseling systems, to provide effective signals for the allocation of human resources in the country.

7.2 Recommendations

The recommendations below cover measures for improving quality of teaching and training, mobilization and effective use of resources, and university-business interaction.

7.2.1 Improving quality

- **Internal Re-organization**-
    - o Curriculum review

    Curriculum must reflect current issues and problems facing the country and should be designed with the aim of not only inducing discussion and awareness but also generating possible solutions. The process for achieving this may be costly, because it should not be an individual instructor's responsibility or one weekend activity but involve all faculties in Ghanaian public universities with the long term in mind. Individual instructors and departments could review course outlines but curriculum development is a wider issue.

    - o Reward for teaching and research excellence

    Currently the recognition given to faculty for excellence in teaching is half-hearted. It needs to be improved. Promotion procedures are out of line with the current procedures in universities abroad and even in Nigeria. Applications for promotion need to be treated with urgency. Furthermore, avenues for publishing research output needs to be improved.

    - o Faculty-student contact hours through introduction of smaller classes

    Faculty members are generally overloaded, and are inadequately compensated. The universities should be resourced through the erection of more lecture theatres and better remuneration to divide students into smaller classes.

    - o Supply of pedagogical materials

    Library resources are appalling, to say the least. Access to global resources through the internet is almost non-existent. These need to be improved, through collaboration with local Internet service providers and computer distributors, international publishers and research institutions.

- International exchange programmes and external linkages

  The universities and other tertiary institutions should increase their involvement in faculty and student exchange programmes with universities abroad. This will increase access to global educational resources at minimum cost.

- Governance
  - National demand on the leadership of tertiary institutions to deliver quality output should increase, through Parliament, the ministries, the media, alumni and the general public.
  - Students should be involved in the evaluation of their training, that is, faculty and academic programmes should be subject to evaluation by students through regular surveys and questionnaire administration and the publication of the findings from such surveys.
  - New management approaches should be introduced aimed at ensuring accountability and transparency to the public, for example, the advisory or oversight role of the NCTE should be clearly defined and enforced.
- Pre-employment training
  - The scope and coverage of student job attachment programmes should be widened. A national job attachment policy should be designed, involving the tertiary institutions, employers' association and other business associations, the trade unions and the ministry of education (and the NCTE).

7.2.2 Reducing Cost and Increasing Funding from Non-governmental Sources

- Some cost aspects could be eliminated simply through better, streamlined management. A detailed study of cost and management structures should be undertaken, to identify areas of duplication, redundancy, and overlaps.
- Decentralized decision-making in the universities could enhance flexibility in a dynamic world of knowledge generation and distribution, and minimize expensive administrative rigidities, for example, in the administration of examinations.
- An expenditure allocation framework could be designed that is at least partly based on results and delivery of specified outputs. The disadvantage of using numerical outputs as basis for performance and budgetary decisions is that quality could be compromised. A periodic evaluation of programme output in terms of quality could be established. This may be easily implemented in graduate programmes, where the percentage of completers as well as the quality of theses, dissertations, and project work could be assessed.
- Create an environment for increased income-generating activities by introducing contract research and fully paid short-term training courses in the universities. Faculty participation in these activities should be given weights in the promotion process, in addition to the direct financial benefits.
- Effective plans for cost sharing with students (and their parents) should be designed in a transparent manner. Students should know how costs were arrived at and what percentage they are bearing: the basis for both should be clearly defined in terms of sound management and social principles.

7.2.3 University–Business Interaction and Division of Labour

To enhance the participation of industry and public sector in the process of improving quality of tertiary education in Ghana, the following should be the focus:

- Curriculum development: participation in curriculum development workshops and provision of funding especially by professional associations and large employers
- Student attachment or vacation jobs: fiscal incentives may be necessary to widen the scope of participation on the employer's side
- Funded research: faculties should collaborate with large enterprises to formulate research agenda
- Employment or job advisory: career centers on campuses should collaborate with human resource departments to provide current information on the demand for skills in the labour market
- Donation to specific funds and programmes: private individuals and organizations should be encouraged to give towards academic, cultural and research programmes
- Faculty attachment: programmes should be designed to involve faculty in the practical side of life in the community and country. Existing sabbatical programmes should be reviewed with "corporate" benefits in mind.
- Representation on boards and committees: private sector institutional representation especially in professional and semi-professional programmes such as engineering, medicine, accounting, and computer science should be encouraged.

A coherent policy for involving private and other public sector establishments in tertiary education management should be designed by the NCTE in collaboration with the universities, other public agencies and ministries, and the private sector. This policy should seek to improve the incentive for private corporate sector to be involved in the financing and management of tertiary institutions by addressing issues related to governance and financial accountability in the tertiary institutions.

Responsibilities that could be best performed by the private sector should be detached from the day-to-day responsibilities of the management of tertiary institutions and assigned to independent agencies. For example, housing could be separated from admissions, and support given by the political authorities in collaboration with the universities, to private, commercial operators working within agreed upon guidelines to ensure minimization of exploitation and the provision of decent housing for all admitted students.

APPENDICES

Appendix Table 1. Economic Growth By Sub-sectors (%)

Year	Overall	Agriculture	Industry	Service
1990	3.3	-2.0	6.9	8.8
1991	5.3	4.7	3.7	6.3
1992	3.9	-0.6	5.8	7.7
1993	5.0	2.5	4.3	7.0
1994	3.8	1.0	1.3	5.0
1995	4.0	3.7	4.1	4.7
1996	4.6	5.2	4.8	4.2
1997	4.2	4.3	6.4	6.5
1998	4.7	5.1	3.2	6.0
1999	4.4	3.9	4.9	5.0
2000*	3.7	2.1	3.8	5.4
2001**	4.0	3.7	4.0	4.3

* Estimated

** Projected

Sources: Ghana Government Budget Statements and ISSER. Various years

Appendix Table 2. Trends in Advertised Job Vacancies 1981-2000

Year	Total Number of Advertised Jobs	Percentage Share of Jobs Requiring At least Bachelor's	Postgraduate	Prof./HND
1981	1637	29.7	2.9	25.1
1982	1534	35.0	2.7	27.3
1983	1216	40.3	2.1	24.3
1984	1007	36.5	1.8	28.1
1985	791	42.0	3.4	24.3
1986	559	62.6	4.8	12.7
1987	462	65.3	1.7	18.0
1988	1075	53.9	2.9	21.9
1989	761	51.9	3.0	25.4
1990	1174	55.5	2.4	27.3
1991	1278	55.0	2.7	23.9
1992	2306	42.4	5.9	22.3
1993	990	47.1	7.8	26.4
1994	810	58.0	7.4	19.8
1995	1497	39.3	7.4	16.4
1996	1098	50.5	10.5	18.7
1997	3629	34.6	8.7	16.8
1998	3924	28.1	14.0	17.1
1999	5078	41.7	13.8	19.3
2000	3510	54.3	19.3	25.2

Note: “At least Bachelor’s” includes postgraduate.
Source: Boateng (2000).

Appendix Table 3 Enrolments in the Universities

University of Ghana

Programme	1994/1995		1996/1997		1997/1998		1998/1999		1999/2000	
	#	%	#	%	#	%	#	%	#	%
Bachelor of Arts	3824	72.2	4911	68.9	4732	72.7	5207	77.5	6830	79.9
Bachelor of Science	1276	24.1	1844	25.9	1393	21.4	1513	22.5	1532	17.9
Medical/Health Science	198	3.7	377	5.2	388	5.9	0	0	185	2.2
TOTAL	5298	100	7132	100	6513	100	6720	100	8547	100

Kwame Nkrumah University of Science and Technology

Programme	1994/1995		1996/1997		1997/1998		1998/1999		1999/2000	
	#	%	#	%	#	%	#	%	#	%
Bachelor of Arts	1738	44.9	2233	46.2	2508	42.1	3466	46.2	3880	46.2
Bachelor of Science	901	23.3	1200	24.8	1704	28.6	2056	27.4	2295	27.3
Engineering	763	19.7	873	18.0	1067	17.9	1211	16.1	1324	15.7
Medical Science	465	12.1	531	11	680	11.4	776	10.3	908	10.8
TOTAL	3867	100	4837	100	5959	100	7509	100	8407	100

University of Cape Coast

Programme	1994/95		1996/97		1997/98		1998/99		1999/00	
	#	%	#	%	#	%	#	%	#	%
Bachelor of Arts	2677	75	3622	78	5270	81.8	5740	82.4	6288	84.4
Bachelor of Science	893	25	1021	22	1170	18.2	1224	17.6	1163	15.6
TOTAL	3570	100	4643	100	6440	100	6964	100	7451	100

University College of Education, Winneba

Programme	1994/1995		1996/1997		1997/1998		1998/1999		1999/2000	
	#	%	#	%	#	%	#	%	#	%
Bachelor of Arts	481	74.8	846	79.6	1081	84	1417	86	549	100
Bachelor of Science	162	25.2	217	20.4	206	16	231	14	0	0
TOTAL	643	100	1063	100	1287	100	1648	100	549	100

University of Development Studies, Tamale

Programme	1994/1995		1996/1997		1997/1998		1998/1999		1999/2000	
	#	%	#	%	#	%	#	%	#	%
Bachelor of Arts	55	57.9	95	37.3	158	41.2	174	34.7	219	30.7
Bachelor of Science	40	42.1	138	54.1	174	45.3	226	45.0	407	57.0
Medical Sciences	0	0	22	8.6	52	13.5	102	20.3	88	12.3
TOTAL	95	100	255	100	384	100	502	100	714	100

Source: NCTE files

Note: Final year enrolments in parentheses.

Appendix Table 4 Total Enrolment (First Degree) in Universities

Programme	1994/1995		1996/1997		1997/1998		1998/1999		1999/2000	
	#	%	#	%	#	%	#	%	#	%
Bachelor of Arts	8775 (1863)	65.1 (21.2)	11707 (2346)	65.3 (20.0)	13749 (3785)	66.8 (27.5)	16004 (4146)	68.6 (25.9)	17766 (4407)	69.2 (24.8)
Bachelor of Science	3272 (640)	24.3 (19.6)	4420 (783)	24.7 (17.7)	4647 (804)	22.6 (17.3)	5250 (1281)	22.5 (24.4)	5397 (1187)	21.0 (22.0)
Medical Science	663 (191)	4.9 (28.8)	930 (146)	5.1 (15.7)	1120 (495)	5.4 (44.2)	878 (82)	3.8 (9.3)	1181 (268)	4.6 (22.7)
Engineering	763 (213)	5.7 (15.7)	873 (132)	4.9 (15.1)	1067 (197)	5.2 (18.5)	1211 (209)	5.1 (17.2)	1324 (269)	5.2 (20.3)
TOTAL	13473 (2907)	100 (21.6)	17930 (3407)	100 (19.0)	20583 (5281)	100 (25.7)	23343 (5718)	100 (24.5)	25668 (6131)	100 (23.9)

Note: values in parentheses relate to the number of students in the final year.

Appendix Table 5.

Enrolment in Polytechnics (Higher National Diploma)

Programme	1994/1995		1995/1996		1996/1997		1997/1998		1998/1999		1999/200
	#	%	#	%	#	%	#	%	#	%	#
Engineering	1055 (60)	35	1713 (327)	34	2371 (469)	33	3103 (692)	33	3 805 (862)	31	4363 (1095)
Applied Maths	252 (16)	9	761 (89)	15	1253 (189)	17	1525 (408)	16	1962 (458)	16	2665 (663)
Mgt/ Business Studies	1669 (135)	56	2597 (553)	51	3578 (760)	50	4805 (1040)	51	6576 (1281)	53	9082 (2368)
TOTAL	2976 (211)	100	5071 (969)	100	7202 (1418)	100	9433 (2140)	100	12343 (2601)	100	16110 (4126)

Note: Values shown in parentheses relate to the number of students in the final year.

APPENDIX 6

LIST OF EMPLOYERS SUCCESSFULLY INTERVIEWED FROM THE VARIOUS SECTORS

1. **Agriculture**
   - Afariwaah Farms Limited, Tema

2. **Forestry & Logging**
   - Forestry Commission

3. **Mining & Quarrying**
   - Ghana Chamber of Mines

4. **Construction and Engineering**
   - ABP Consult

5. **Utilities**
   - Ghana Telecom

6. **Public Sector** (Commercial)
   - State Enterprises Commission

7. **Other Services**
   - ISODEC (NGO Sector)

Questionnaires were sent to some manufacturing, banking and finance, commercial enterprises, and educational institutions, but in view of the shortness of time they could not return them for their responses to be incorporated in this report.

APPENDIX 7

List of Labour Sector Executives Interviewed

Name & Title of Person	**Organisation**	**Date Interviewed**
Mrs. Cecilia Bannerman (Minister)	Min. of Manpower Development & Employment	July 13, 12.30-1.00 p.m
Mrs. Rose Annang (Executive Director)	Ghana Employers Association	August 8th
Mr. Kwasi Adu Amankwa (Secretary General)	Trades Union Congress of Ghana	July 13, 6.00-7.30p.m

APPENDIX 8
NON-ACADEMIC SKILL REQUIREMENTS (Critical Attributes): SOME DESCRIPTIONS

SKILL TYPE	EXAMPLES	DESCRIPTION
1. GENERAL SKILLS	Planning	Ability to draw up activity schedules and resource requirements
	Problem-solving	Ability to elicit information, locate and solve problems; creative
	Risk-taking	Ability to muster courage to undertake new assignments
	Position Knowledge	Ability to appreciate roles and responsibilities of position
2. TECHNICAL & MANAGERIAL	Organizing	Ability to mobilize, coordinate and direct resources; delegate and exercise authority
	Decision-making	Ability to evaluate facts and determine course of action in a timely manner
	Motivating	Ability to elicit enthusiasm and commitment for goal achievement
	Sector Knowledge	Familiarity with systems & processes in unit, division, establishment, industry or sector
	Supervisory	Ability to assign duties and exercise legitimate control
3. COMPUTER & ANALYTICAL	Analytical	Ability to break down data and see how various elements fit and relate to each other
4. COMMUNICATION	Verbal or oral	Ability to express clearly and concisely orally
	Written/Presentation	Ability to express clearly and concisely in writing
	Inter-personal	Ability to engage others in pleasant, persuasive discussion/conversation; sociable
	Negotiation	Ability to bargain and obtain favourable terms, arrive at settlement
5. LANGUAGE	Local or foreign	Written, verbal, working knowledge of non-English languages
6. PERSONAL	Team spirit	Ability to participate willingly and cooperate wholeheartedly; give credit to others, express views frankly
	Initiative	Ability to take action without being told, or with minimum instruction or act independently
	Physical	Possessing strength or attraction
	Ambition	Having the desire to succeed, reach a particular goal, strive hard
	Resourcefulness	Ability to devise ways and means
	Integrity	Uncompromising adherence to code of moral or other values, avoidance of deception, expediency, artificiality; maintaining honest and just approach
	Drive	Ability to execute actions vigorously
	Dependability	Ability to accomplish desired actions and accept additional responsibilities
7. OTHER (Subjective)	Gender	Male or female
	Availability	Ability to travel, report early or stay longer at work, at short notice
	Membership	Membership of a professional association; possessing particular certificate, e.g. driver
	Residential	Resident in particular geographical area
	Religious	Member or believer in particular faith, denomination, etc.

Source: U. Pareek & T. V. Rao (1992). 59-63.

APPENDIX 9.
Comparative Structure of Master of Economics Programmes at Selected Universities,
Academic Year 2001

University/ Structure	**London Sch. of Econ.**	**Rutgers USA**	**Dalhousie Canada**	**Legon**
DegreeType	MSc	MA	MA	M.Phil
Duration	10 months	2-3 years	12 months	22 months
Core Courses	(Choose 3) Macroeconomics 1 or 2 Microeconomics 1 or 2 Methods of Economic Investigation 1 or 2	(Do All) Microecon Theory 1&2 Macroecon Theory 1&2 Quantitative Econ Plus any one of the ff: Econometrics, Applied econometrics for Micro Applied Econometrics for Macro Seminar in Econometrics or Applied Econometrics	(Do All) Macroecon Theory Microecon Theory Math for Econ Statistics/Econometrics	(Do All) Microecon 1 &2 Macroecon 1&2 Quantitative Methods 1 &2
Electives	(Choose 1) History of Economic Thought International Econ. Labour Econ Monetary Econ Public Finance Economics of Industry Economics of Less Developed Countries Reform of Econ Systems Capital Markets, the Corporation and Taxation Public Financial Policy	(Choose 1.5) Advanced Micro Advanced Macro and Monetray Theory Advanced econometrics Public Econ Comparative Econ Econ Dev International econ Labour & Human Relations Industrial orgs. Econ History	(Choose 1.5) econ theory Econometrics Labour econ& social policy Public Finance Resource Econ Monetary Econ Industrial Org. Regional	(Choose 4) Public Finance 1&2 Money & Banking 1&2 International Econ 1 & 2 Environmetal Econ 1 &2 Econ Policy Agric Econ Corporate Finance Labour econ Health econ Industrial Econ Advanced Econometrics
Additional Requirement		Thesis	Thesis	Thesis

REFERENCES

Abbott, J. (1996). “The Search for Next-Century Learning.” Wingspread Journal, 8(3).

Boateng, K. (2001). ‘Employment and Incomes Under Structural Adjustment Programme in Ghana.” In, The Social Dimension of Structural Adjustment in Ghana, A.Y. Baah. (ed.) ICFTU/AFRO Research Project. Chapter 2.

Boateng. K. (2000). Postgraduate Employment in Ghana. University of Ghana Inter-Faculty Lecture. Ghana Universities Press.

Boateng, K. (1998). Quality Jobs or Mass Employment? A Study of Some Impacts of Structural Adjustment in the Ghanaian Labour Market. African Economic Research Consortium. Research Paper No. 98. Nairobi.

Boateng, K. and W. Bekoe (2001). “Wage Expectations Among Graduating Students in Ghanaian Universities- the Case of University of Ghana.” Journal of Management Studies. (Under review.)

Coombs, P.H. and J. Hallak (1987). Cost Analysis in Education. EDI Series in Economic Development. Washington D.C.: IBRD

Duraisamy, E.J., J. Lane and J-P. Tan (1997). Is there a Quantity-Quality Trade-off as Enrollments Increase? Evidence from Tamil Nadu, India. World Bank Research Paper. March.

Eicher, J.C. (1984). Educational Costing and Financing in Developing Countries: Focus on Sub-Sahara Africa. World Bank Staff Working paper No.655.

Ghana Statistical Service (1995). The Pattern of Poverty in Ghana, 1988-92. November.

Ghana Statistical Service (1999). Poverty Trends in Ghana in the 1990s. November.

Harvard Institute for International Development/ World Economic Forum (1998). The African Competitiveness Report 1998. Geneva.

International Monetary Fund (1997). A Decade of Civil Service Reform in Sub-Sahara Africa. IMF Working Paper WP/97/179. December.

International Labour Organisation (1998). World Employment Report, 1998-99. Geneva.

International Labour Organisation (1994). African Employment Report 1994. (Draft Working Document). ILO Regional Office for Africa. December.

ISSER. The State of the Ghanaian Economy Report. University of Ghana.

Johnston, J (1984). Econometric Methods. McGraw-Hill, Inc., Third Edition.

Ministry of Education (1996). Higher Education and Work. Report on the Survey of Graduates of the Universities of Ghana, Lego, Cape Coast, and Science and Technology, Kumasi.

Ministry of Employment and Social Welfare (1999). Labour Market Skills Newsletter. Number 2. Accra.

Ministry of Employment and Social Welfare (1999). Report on Graduate Unemployment in Ghana. Accra. December.

National Development Planning Commission (1997). Report on the National Economic Forum and Action Plans. 2-3 September 1997. Accra.

Parrek, U. and T. Venkateswara Rao (1992). Designing and Managing Human Resource Systems. Oxford and IBH Publishing Co. PVT Ltd., Second edition.

Ransom, A., SM Khoo and V. Selvaratnam (1993). Improving Higher Education in Developing Countries. EDI Seminar Series.

Selvaratnam, V. (1994) Innovations in Higher Education: Singapore at the Competitive Edge. World Bank Technical Paper No. 222.

Squire, L (1981). Employment Policy in Developing Countries. A World Bank Research Publication. Oxford University Press.

The World Bank (1999). World Development Report 1998/99. Washington D.C.

The World Bank (1994). Higher Education: The Lessons of Experience.

The World Bank (1988). Education in Sub-Sahara Africa: Policies, Revitalisation and Expansion.

United Nations Development Programme (2000). Ghana- Common Country Assessment Report, 1999. Accra. Chapter 8.

United Nations Development Programme (1994). Ghana: Next Steps in capacity Development and Utilization for Accelerated Growth. January.

University of Ghana (2001). Annual Report 2001, March.

Vandermoortele, J (1991). Employment Issues in Sub-Saharan Africa. AERC Special Paper No.14. August.