

Educational Expansion and Access in Ghana: A Review of 50 Years of Challenge and Progress

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Introduction

In this paper I examine the path that education in Ghana has taken in the last fifty years for significant milestones, achievements and challenges in relation to nation building and socio-economic development. I begin by mapping out the vision of education at the time of independence and discuss the new policies and choices that were made. Next, I highlight the changes in the late 60s to the period from the 1970s to the mid 1980s when education went into sharp decline, and the issues which informed its revival. From 2000, a newly elected government initiated a review of education reforms in the country. This review introduced the latest round of educational changes. I shall highlight the content of these reforms and their potential to contribute to Ghana's aspiration to become a middle-level income by 2020. In the paper, I offer a critique of the progress and challenges of educational development and outline the new challenges Ghana faces as it strives to make education a major contributor to its development aspirations. Although, this paper focuses on Ghana, there are obviously some implications and messages for countries in sub-Saharan Africa since many of them have shared similar aspirations as Ghana.

1961-1966: The vision of a country - Education for accelerated development

At independence, many countries look to reform education to accelerate economic and social development. Ghana was no exception, and the newly independent government saw in education the keys to social and economic development. Analyst and commentators of Ghana's development history have often compared her to South Korea and Malaysia and spoken of how both countries, having started on the same economic level as Ghana, have achieved faster economic growth whilst Ghana struggles to break through into middle-level income status. What is worth pointing out is that at the time of independence, Ghana had a carefully articulated plan of how education was going to support the efforts to become a prosperous economy.

On March 5, 1957, Ghana's first president, Dr Kwame Nkrumah addressed the old Legislative Assembly for the last time and outlined his government's vision which had education at the centre. It is instructive to remind ourselves of what Nkrumah said and the policies and strategies that his government introduced to pursue his vision for education. Essentially the development of education was to achieve three goals: first, it was to be used as a tool for producing a scientifically literate population. Secondly, for tackling mainly the

environmental causes of low productivity; and thirdly, for producing knowledge to harness Ghana's economic potential. Investments were channelled into the whole system of education, from primary to tertiary, to fulfil these aspirations and goals. This approach to education development contrasts with what happened in later years, especially in the 1980s when reforms in education under international influence focused almost exclusively on primary (basic) education. So what was Nkrumah's vision? When he addressed the Legislative Assembly two days before the declaration of independence he made it clear what the development agenda and challenge was. He said,

“We must seek an African view to the problems of Africa. This does not mean that western techniques and methods are not applicable to Africa. It does mean, however, that in Ghana we must look at every problem from the African point of view ... Our whole educational system must be geared to producing a scientifically-technically minded people. Because of the limitations placed on us, we have to produce, of necessity, a higher standard of technical education than is necessary in many of the most advanced countries of the Western world ... I believe that one of the most important services which Ghana can perform for Africa is to devise a system of education based at its university level on concrete studies of the problems of the tropical world. The University will be the co-ordinating body for education research, and we hope that it will eventually be associated with Research Institutes dealing with agriculture, biology, and the physical and chemical sciences which we hope to establish ... today in a country of five million inhabitants nearly half a million children enjoy primary education. We must, however, provide further outlets for these children and give them an opportunity to learn something of engineering, tropical agriculture and of the problems of tropical medicine and hygiene. Only with a population so educated can we hope to face the tremendous problems which confront any country attempting to raise the standard of life in a tropical zone” (McWilliam & Kwamena-Poh, 1975:94)

There are some important points to note from these statements and how they shaped the choices that were made in the newly independent Ghana. First, there was a determination that education would be used to unblock the restrictions that the environment and other humanly induced conditions placed on economic growth. Through research and advances in science and technology solutions would be found for the problems of disease, poverty and low-productivity. This signalled the importance attached to advanced knowledge for development and placed universities at the forefront to “make available to the country the knowledge and experience gained through research” (McWilliam & Kwamena-Poh, 1987:112).

Unfortunately, nearly two decades after Nkrumah's overthrow, funding of higher education reduced drastically and hampered universities and research institutions capacity to engage in productive research. In the mid 1970s, universities expenditure on research and development was about 0.7% of GDP and fell further to 0.1%-0.2% of GDP during the economic crisis of the 1980s (Effah 2003). The focus of international development assistance on basic education during this period also meant that higher education received even less attention, and lost out in terms of funding to primary education. Fortunately the situation is changing and today there is more recognition of the important role higher education can play in poverty reduction (World Bank, 2007). But, at the time of independence Ghana's leaders

were fully convinced of the benefits that higher education research focused on local development related problems could bring to economic progress.

Secondly, science and technology were seen as instruments for accelerating economic growth. A scientifically literate population capable of contributing to creativity and innovativeness was the answer to poverty and low-productivity.

Thirdly, technical education would be Ghana's route for accelerating technological and economic growth. The establishment of technical schools and polytechnic institutions was expected to lead to increases in the middle-level technical manpower base of the country. Students in these institutions were also required to undertake intensive study of mathematics, science, technical drawing and English as foundation subjects for further learning. Through apprenticeship schemes with industries, technical education was linked to labour market requirements, and outstanding students were encouraged to pursue their education to university level (McWilliam & Kwamena-Poh 1975).

Fourthly, primary education would function as preparation for higher levels of education. In 1960, Ghana introduced fee-free compulsory primary and middle school education, and immediately identified teacher training and teacher welfare issues as areas for investment to promote quality primary education. This stands in contrast to the international imperatives on basic education in the 1990s, which projected universal access to primary education without sufficiently linking this to teacher development and welfare, and also to systematic expansion of post-primary education. The situation is changing somewhat, with international development institutions such as the World Bank now arguing for greater investment into secondary education to accelerate Africa's economic growth (World Bank, 2007). Post-independence education strategists in Ghana were under no illusion about the importance of improving access to further education and training if demand for primary education was to grow to achieve EFA.

Today, Nkrumah's plans for education may seem ambitious, but closer examination shows that they were informed by a realistic assessment of resource constraints and "in accordance with the various policies laid down in the decade before independence" (see McWilliam & Kwamena-Poh 1975:94-115). Education's agenda was clear: to reduce poverty through increased economic productivity riding on the back of advances in science and technology.

Some of the achievements of the early post-independent era included a well-trained and motivated teaching force that was recognised as fundamental for ensuring quality of educational provision. Teachers enjoyed salaries comparable to people with similar qualifications in other professions with Nkrumah declaring that he wanted the profession to "to give service that is second to none" (McWilliam & Kwamena-Poh, 1975:97). Another achievement was the establishment of a Ghana Education Trust to support the rapid expansion of secondary and technical education. The prognosis was that Ghana would not be self-sufficient in secondary school products, considered key to its economic growth strategy, until about 4 percent of each generation was entering secondary schools. This analysis assumed that "50 percent of each generation entered primary schools, (and) when this had been reached, the next ten years, ... should achieve 100 percent primary and 10 percent

secondary education’ (McWilliam & Kwamena-Poh 1975:102). Finally, there was the introduction of a new education Act in 1961 which articulated the vision of education and the structures for delivering its goals. For example, the Act gave the responsibility for expanding primary education to local education authorities. The result of these policies was the expansion of access at all levels of education (see table 1), and in just a matter of a few years after independence, Ghana had an education system that could be described as one of the most respected in Africa (World Bank 2004).

Table 1: Ghana: Rapid expansion of access to Education after independence

Level	1951		1966	
	Schools	Students	Schools	Students
Primary	1083	153360	8144	1,137,495
Middle	539	66175	2277	267434
Secondary	13	5033	105	42111
Teacher Training	22	1916	83	15144
Technical	5	622	11	4956
University	2	208	3	4291

Source: Hayford, B.K., 1988

1967-1987: Linking growth to high quality and decline in Education

After Nkrumah’s government was overthrown in 1966, rapid expansion of education provision was severely criticised as having compromised quality. In 1967, based on the recommendations of the Kwapong reform committee, 10 years elementary education with a break in year eight for selecting suitable candidates for secondary education was introduced. Those who were not selected went on to complete two years continuation classes with an emphasis on pre-vocational education. The concept of continuation schools must have undermined the credibility of vocational and technical education as it only took those who had failed to proceed to an academic secondary education. Continuation schools were criticised for promoting inferior education for the masses whilst secondary education had become the preserve of elite Ghanaian children (Dzobo 1987 in MOE 1999). Meanwhile, many children from well-off backgrounds began attending private primary schools to gain direct entry to secondary education. Thus, whilst the majority of Ghanaian children were going through a 6 year primary, followed by 4 years middle and 7 years secondary education, making 17 years of pre-university education, a minority from well-off backgrounds were doing 13 years of pre-tertiary education.

Competition, selection and choice began to take root in primary and middle school education which limited access to secondary education, especially for children from disadvantaged and poor households (see Addae-Mensah, Djangmah & Agbenyega, 1973). By “1985, 30 percent of secondary entrants were from private primary schools, most of the rest coming from the fourth year of middle school” (World Bank, 2004:8). Recently, private sector provision of basic and secondary education has grown, some would say, offering more choice for families than ever before. However, there is growing evidence that it might also be acting as a tool for social mobility and stratification in Ghanaian society (see, Addae-Mensah 2000; Donge et al., 2003).

By the mid 1980s, Ghana's educational system was in sharp decline following a period of protracted poor economic performance in the 1980s. In 1982, per capita income was 30 percent below the 1970 level, and the index of real monthly earnings had fallen from 315 to 62. This period also witnessed acute shortage in teachers, textbooks, and instructional materials throughout the country's schools (Akyeampong et al., 2007).

1987-2007: Socialist ideology, basic education for all and practical skill training

In an attempt to find solutions to poor access, quality, and educational infrastructure, the populist Rawlings' government which had come into power through a military coup, turned to the World Bank for assistance to reform Basic Education¹ as part of economic reform (World Bank 2004; Donge et al., 2003). The blueprint for the reforms emanated from the work of the Dzobo Committee in 1973 which had suggested a new structure of education comprising 6 years primary, 3 years junior secondary and 3 years senior secondary, as well as a new content of education with emphasis on vocational and technical subjects for all children up to junior secondary.

The 1987 education reforms abolished the middle schools (four years), replaced it with three years junior secondary, and reduced senior secondary from seven to four years. Primary and junior secondary combined to become basic education. The reforms also included comprehensive curriculum reforms. Whereas the Middle school was grammar education geared towards preparation for secondary education, the diversified JSS and SSS curriculum was intended to prepare the majority of children whose formal education terminated either at JSS or SSS for the world of work, and the rest, for further education. The new system was also to ensure that *all* products of primary school had access to a higher level of general academic training as pertained in the lower forms of the traditional secondary school to address the inequity between secondary school and the middle/continuation school.

Evidently, diversifying the education curriculum to include technical and vocational elements has not necessarily increased the stock of middle level technical and vocational manpower base of the country. What this policy had failed to see was that formal schools are generally ineffective in changing attitudes towards employment and self-employment especially towards vocational and technical education (see Foster 1965; King & Martin 2002). Besides, as a supply driven initiative it failed to recognise that the kind of macro-economic conditions needed to motivate demand for practical subjects was lacking in what was a poor performing economy. Ghana was only just emerging from a devastating economic period and did not have an abundant supply of network of production and trade to create high demand for the kind of practical skills formal schools were developing. The 2000 Ghana Living Standards Survey (GLSS) revealed that only about a tenth of workforce in various industrial sectors had a secondary or higher qualification and about 43 percent of people engaged in agriculture had

¹ Support related to Basic Education included: two Education Sector Adjustment Credits (EdSAC I and II), the Primary School Development Project (PSDP 1994-1998), and the Basic Education Sector Investment Credit (BESIC, 1996-2002). By 2003, over \$500 million of donor funding had been injected into Ghana's education sector most of it going into infrastructure development and rehabilitation.

never been to school, whilst 53 percent either completed or failed to complete basic education. With only about 5 percent of the active labour force engaged in production with a secondary or higher qualification, the 1987 education reforms had been far from making an impact on the labour market profile.

Also, as a condition for World Bank support the reforms had placed a lot of emphasis on cost recovery in secondary and tertiary education (World Bank 2004). This meant increases in school fees, textbooks and withdrawal of state subsidies. This hit poor families the hardest who became increasingly excluded from participation in post-basic education.

But overall, the infrastructure base of basic education improved after it had deteriorated during the economic decline of the 70s. Basic schools increased (from 12,997 in 1980 to 18,374 in 2000), and attendance and completion rates improved, but levelled off later in secondary. Growing enrolments also narrowed enrolment differentials between boys and girls (World Bank, 2004). What many commentators and analysts of Ghana's educational progress under the 1987 reforms point out is that, although access improved, the quality of education in all sectors did not (World Bank, 2004; Cobbe 1991; Donge et al., 2003). In 1995, the 'free compulsory universal basic education' (FCUBE) reforms were introduced to address the quality concerns in basic education. More resources were allocated to enhance quality and management for efficiency (World Bank 1996). Community involvement in education decentralisation was intensified. Overall these measures contributed to minor improvements in quality but not of the magnitude that would make a significant difference to educational outcomes at post-basic level.

At the basic level certain challenges have persisted. For example, overage entry appears stubbornly resistant to attempts to enroll all children, especially girls, at the age of six. Regional variations in access and participation are such that as many as 40 percent of school age children appear not to be enrolled in some parts of the country, especially in the North. Besides, levels of achievement are such that further expansion in the future risks increasing numbers who learn little of what is required to successfully complete basic education at levels that assure sustained literacy and numeracy (Akyeampong et al., 2007).

Quality concerns in education have resulted in a sizeable private sector involvement in Ghanaian basic education. Today about a fifth of all primary schools are private (MOESS 2007). As Ghana approached the year 2000, the biggest unresolved challenge facing education was how it was going to make significant improvements in the learning achievements of students from all backgrounds at all levels of schooling (Donge et al., 2003). Increasingly, Ghanaians are developing an individualistic outlook to education where looking for a good school and even paying for it is becoming common.

The lessons of both 1987 and 1995 education reforms in Ghana are particularly important at a time when the international community is pressing and supporting African states to improve access to basic education as a strategy for poverty alleviation. Education developments in the 1980s and 90s have shown that good access to poor quality basic education will not yield the private and social returns of investments to promote economic growth. The quality imperative is growing louder with the realisation that "competitiveness

in tomorrow's economic environment will require (not only) an equitably accessible basic education of 8 or 9 years of acceptable quality, but selective and equitable access to opportunities for further education and training" (World Bank, 2007:2).

Ghana is aiming to become a middle-level income country by 2020. But, to achieve this goal requires manpower with capabilities in abstract and problem-solving skills to tackle the increasingly technological environment of production and trade. Essentially, these capabilities begin their development mainly from the secondary education level where also, the returns to the individual and society are much higher (see, Lewin 2006; World Bank 2007). Analysis of the rate of return by level of education in Ghana has indicated that upper secondary produces a higher rate of private and social return than the lower secondary (JSS) level (Canagarajah et al., 1997). The relatively low rates of return to JSS are also an indication that overall, JSS has been inefficient in preparing the large number of students who complete, to qualify for SSS or actively participate in the labour market. In contrast, the high rates of return to senior secondary indicate that it functions better as terminal education for entry into the labour market.

Progress towards equitable access to quality secondary education

More recently demand for secondary education has grown. In the last five years alone, secondary enrolment has grown by as much as 60 percent, although the completion rate of 34 percent in 2006 (MOESS, 2007) suggests dropout is still high. In 2006, secondary net enrolment stood at about 13 percent after stagnating at 10 percent for a decade. What this means is that, the proportion of secondary students not of the appropriate age for secondary is high. Therefore, despite the relatively high enrolments, the secondary education system has not been very efficient in delivering high numbers of graduates for further education and the labour market. The recent Presidential commission on Education reforms in Ghana examined the reasons why most JSS students were unable to access senior secondary, and blamed this on a number of factors: inadequate facilities and infrastructure, parents unable to afford secondary fees, a lack of alternative tracks for students with different interests and abilities, an inability of students to meet the minimum requirements for further education and a lack of interest in further education (GOG, 2002).

Similarly, the diversification of secondary education meant to open up opportunities for the different aspirations and abilities of students, as well as improve streaming into different post-secondary education and training never fully materialized. One reason was that the quality of practical education students received depended on whether they attended a school in a rural or urban area. Generally, there is better quality provision in traditional boarding schools located mostly in cities and towns than in community day secondary schools found mainly in rural or peri-urban areas. Also the traditional schools attracted more qualified teachers than the community schools. Teacher shortages in the technical/vocational subject areas effectively reduced quality of provision and undermined student interest (see Akyeampong 2005). But, perhaps the most important influence on students' subject choice is the opportunity structure outside the school system. This has proved to be decisive for some students when it comes to selecting school subjects, and increasingly, many of these students are seeing liberal arts and science subjects as offering better opportunities than

vocational and technical subjects (see King et al., 2005; Ampiah 2003). When in the mid 90s Peil (1995) asked the adult population of residents in Madina, a suburb of Accra, which subjects they studied were most valuable to them the responses were revealing – “about a third said reading, a fifth mathematics, a quarter both of these, (only) 7 percent indicated vocational subjects”. This says something about the importance attached to core skills in numeracy and literacy for economic survival, and seems to support the assertion that realism about labour market opportunities in Ghana have much to contribute to job aspirations among students (see King and Martin 2002; Akyeampong 2005).

Over the years, the ideological sentiments associated with technical and vocational secondary education has made sure that it remains at the forefront of education policy. But what this does not take into account is the pragmatic implication of costs, and how that might affect equitable access to quality. Community secondary schools which were introduced under the 1987 education reforms to make secondary education more affordable and accessible to students in rural populations, lacked adequate infrastructure, teachers and equipment to support their practical focus. The lesson is that, implementing a large scale diversified curriculum under resource constraints creates uneven access to quality and choice of secondary subjects (see Akyeampong 2005). Recent international evidence suggest that it is rather better to emphasize generic and problem-solving skills in secondary education as foundation for further training in post-secondary technical and apprenticeship institutions. This has also the potential of providing better access to secondary education (see Lauglo & MacLean 2005). Generally, secondary education is faced with the challenge of providing equitable and meaningful access so that dropout reduces and learning achievements improve significantly. An additional challenge is the rising cost of secondary education to both government and parents and the potential that this has on constraining future growth (Akyeampong 2005).

International evidence suggests that the “quality of secondary education, especially in maths and science, has a stronger impact on economic growth than years of schooling. Equitable access to secondary education for poor students, and especially girls is an additional factor enhancing countries’ economic growth performance” (World Bank 2007:9). But this also depends on an adequate supply of qualified teachers who can generate interest in science and mathematics through innovative teaching. Ghana’s progress against these international benchmarks reveals that developments in secondary education still have a long way to go. Of all approximately 14,000 secondary teachers in public schools, about a fifth are not professionally qualified, and for science and mathematics subjects this is even less - 19 percent and 13 percent approximately (NPT/GHA PRACTICAL project, 2007). The general science stream in secondary schools currently stands between 13 to 15 percent of all students, although elective science and mathematics subjects can be selected in other more practical streams. Overall participation in physics has declined to 18 percent of examination candidates, in chemistry to 21 percent, and in elective mathematics to 28 percent. Expansion in secondary education has predominantly taken place in the general arts subjects of which the relative size has grown relative to other subjects. Technical, vocational and Agricultural streams have all declined, either because “schools do not have the capacity to offer more specialist subjects ... or newly created schools only offer a very limited curriculum” (See NPT/GHA PRACTICAL project, 2007:13-14).

Progress in technical vocational education and polytechnic education

Right from independence Ghana has always identified and prioritized technical vocational education and training (TVET) as the sector for providing its middle level manpower base for accelerated development. Unfortunately progress in this area has been slow. In recent years, (e.g. from 2002 to 2006) enrolment in TVET institutions has stagnated at about 18,000 students (MOESS 2007).

Although enrolments in the ten Polytechnics² have increased substantially, the increases have significantly been in business related programmes and not in science and technology programmes (table 2). This is happening despite the government approved norms of 60:40 for science/technology programmes against business related programmes. What this could be signaling is that probably the formal and informal labour market has more demand for business related graduates than for graduates in science and technology. Proposals to transform the Polytechnic curriculum to support the development of core competencies and generic skills to increase chances of polytechnic graduates fitting in with changing labour market demands suggest a response to the need for demand-driven policies.

Table 2: Enrolment in Science/Technology and Business and related Programmes in Polytechnics

Academic Year	Science/Technology	Business & related programmes	Ratio 60:40
1996/1997	4,057	3,363	55:45
2000/2001	8161	10,289	44:56
2003/2004	9908	14,445	41:59

Source: National Council of Tertiary Education (NCTE) Statistical Digests

The growth of polytechnic education has always been constrained by the costs. TVET has consistently been allocated about 1 percent of total education spending and shows no sign of change (see table 3). One of the success stories in educational financing in Ghana has been the introduction of the Ghana Education Trust fund (GETfund). The GETfund is generated from 20 percent of all VAT receipts which is then used to supplement financing shortfalls at both tertiary and pre-tertiary levels of education. For the polytechnics, the GETfund has helped to increase funding from 28 percent of assessed requirements in 1998 to 58 percent in 2000 (Effah 2003). The current government has committed itself to a new partnership arrangement with the private sector to support TVET outside the formal sector. The government has accepted responsibility for funding the first year of apprenticeship training, and indicated its commitment to match funding levels to that of the secondary sector (Government of Ghana 2004).

Employment has been a major concern of the polytechnic sector where difficulties in interpreting qualifications for placement on the job hierarchy have sometimes affected employability of polytechnic graduates. Although no comprehensive tracer studies have

² Polytechnics were upgraded to tertiary institution status in 1993 have since then made a slow but determined progress to upgrade their programmes to degree status.

been carried out on polytechnic graduate employment, some analyst suggests that about a third of polytechnic graduates are unemployed (Afeti et al, 2003). Yet again, this is an indication that much of TVET has been supply driven and focused rather narrowly on specialized training that has low market demand.

Table 3: Expenditure by level of education as percentage of total expenditure (2003-2006)

Level	2003	2004	2005	2006
	Expenditure	Expenditure	Expenditure	Expenditure
Primary	40.0	32	30	28
JSS	22.0	16	18	17
SSS	15.0	20	21	16
TVET	1.0	1	1	1
Tertiary	14.0	21	20	23

Source: MOESS (2007)

The history of education development in Ghana suggests that TVET development plans face two main challenges. First, ensuring that sustainable capital and recurrent investment is available to ensure systematic growth and secondly, monitoring the quality of implementation especially the extent to which relevant institutions and structures can be readied to assume new roles and responsibilities.

Progress and developments in University Education

At the time of independence, Ghana had only two (public) tertiary institutions (universities). The last decade has witnessed phenomenal growth³. Currently, Ghana has 5 public universities, over 20 private (local- and foreign-owned) university colleges, 10 public polytechnics and several other professional/specialized (both public and private) tertiary institutions. This growth can be interpreted to mean high demand for tertiary education. On average, only about forty-nine percent of qualified applicants gain admission to the public universities creating a demand-supply gap of about fifty-one percent (Oduro & Senadza 2004)

One of the reasons why the tertiary sector is doing so well is due to the GETfund. GETfund support has been used to expand academic and physical facilities (i.e. student hostels, lecture halls, laboratories etc) allowing institutions to increase their intake. Despite the phenomenal rise in intake, participation rate of students in the age group 17 to 21 is very low (below 5 percent) compared to developed countries (over 50 percent). There is therefore still some way to go before the full benefits of an expanded university system can be felt in the Ghanaian economy.

A challenge that progress in this sector faces is ensuring that there is wider participation from all groups, and not from well-off segments of society. The indication is that much of the increased participation in tertiary education is coming from relatively few urban secondary schools. In the University of Ghana, for example, a study revealed that between 60 to 90

³ From 1999 to 2006 enrolment in public universities and polytechnics have increased by over 120 percent (NCTE Statistical Digest)

percent of students selected to various degree programmes came from the top 50 senior secondary schools which constitute less than 10 percent of senior secondary schools (Addae-Mensah 2000). Expanding the base from which tertiary education draws its students is going to be a major challenge for the future, and will mean improving the quality of secondary education in semi-urban and rural areas, and introducing targeted subsidies for poor households. One step that has been taken by the current government which might help to widen participation from across the country is the on-going initiative to upgrade infrastructure facilities of one senior secondary school in each of the 138 districts. This initiative has the potential of ensuring access to quality secondary education across the country, and increase wider participation in tertiary education.

In 1992 a unique model of university education was introduced into the university system in Ghana. The University of Development Studies (UDS) was set up as an institution that would use research to promote the advancement and dissemination of knowledge and its application to the development needs of Ghana, especially in the North. Most of the work that UDS undertakes is in agricultural science, medical and health sciences and integrated development studies. UDS fits Nkrumah's idea of focusing much of university research on locally relevant development issues that pose a threat to economic productivity. The University of Education in Winneba has also been established focused mainly on education research and teacher development. Together with the University of Cape Coast, it runs an expanding distance teacher education programme with over 20,000 enrolled students.

Research in the universities is also growing. For example, about a fifth of the University of Ghana's budget goes to research activities whilst the Kwame Nkrumah University of Science and Technology, and the University of Cape Coast spend about 6 percent and 3 percent respectively (Effah 2003). The challenge for universities and research institutes is, how funding can be targeted more directly at problems of development in health, science and technology to alleviate poverty and increase productivity.

Ghana has also managed a relatively successful diversification of funding for tertiary education. GETFund has come to support infrastructure developments in education and a student loan scheme has been instituted. State universities are increasingly engaging in income generating activities to supplement government subvention. But even with these innovations in funding, the tertiary sector continues to consume a substantial share of education expenditure compared to other education sectors (see table 3). Whilst government spending on both primary and secondary education has been falling, that of tertiary education has increased from 14 percent in 2003 to 23 percent in 2006. The unit cost of tertiary education is about three times that of the unit cost of TVET, and about 12 times the unit cost of primary education (MOESS, 2007). Compared to other sub-Saharan African countries with similar commitments to universalizing primary education, Ghana spends far less on primary education - 28 percent compared to the SSA average of 50 percent (World Bank, 2007). It is not likely that public financing will be able to meet increasing demand for additional places in both tertiary and TVET, which means that private and parental contributions will still continue to be crucial in the future.

Ghana faces a stark challenge: where should it prioritize funding of education to maximize impact on economic development? Financial projections for the future clearly indicate that Ghana will still need the support of development partners to meet its education growth targets (MOESS 2007). For tertiary education, the challenge is to ensure that funding is targeted to coincide with government priority areas. Currently, there is a mismatch between government priority and practice on the ground. Most of tertiary funding (universities and polytechnics) goes to support students pursuing liberal arts, humanities and business programmes. In state universities, the ratio of current enrolment in humanities and science and technology based programmes is about 65:35 (MOESS 2007).

What Ghana can celebrate is the contribution that the private sector is making to tertiary education, and the growing number of distance education and sandwich programmes on offer in universities. As private access expands, this will reduce pressure on state funds so that more of it can then be used to support other education sectors.

The new vision of education: Reforming education in a competitive market driven global economy:

In September 2007 Ghana launched new education reforms. Secondary education and TVET have both been prioritized in the reform plans. To address concerns about quality, senior secondary education has been extended from 3 to 4 years. There is a new determination to restructure pre-tertiary education provision so that it focuses on preparing *all* secondary students either for entry into tertiary institutions or for the job market through apprenticeship training in the private sector (MOESS 2007). The reforms have set 2015 as the target date for achieving universal basic school completion, and 2020 as the date for all junior secondary students to benefit from senior secondary education. Whilst the changes may be familiar, they seem to reflect new understandings that are in keeping with international trends and experiences in investment in education for economic growth. The new reforms have recognized that the divide between academic and technical and even vocational training is becoming more blurred, and that students trained nowadays require not only skills that are immediately applicable to work, but also flexible knowledge and skills that will enable them to adapt as products and production methods change. The new emphasis is that education acquired by TVET student(s), for instance, should enable them to utilize the available information for more efficient production. Consequently the reforms are aiming to link schooling to the world of work by developing programmes that focus on job market readiness, through alliances with private and public sector agencies (MOESS 2007). There is also a commitment to tracking, monitoring and evaluating student flows to enhance the development and design of programmes tailored to job market needs. A new education bill has been prepared which sets out the new structures and institutional roles and responsibilities to support further educational development.

New policy initiatives are being introduced to increase participation to support both small-scale and large-scale industries. A TVET policy Act has been passed by Parliament to support the establishment of a council for technical and vocational education and training (COTVET). COTVET will have responsibility for coordinating and overseeing all aspects of TVET, including the establishment of a national qualifications committee to determine

standards and competencies. There is also renewed emphasis on apprenticeship and skills training, but this time in partnership with the private sector because of the recognition that “apprenticeship to acquire proficiency in the numerous areas of skill, industry and craftsmanship is today dominated by the private sector (GOG 2004:26). All these measures are intended to once again rejuvenate TVET and encourage its growth.

Educational decentralization and management to improve the operational efficiency and promote a more responsive approach to education service delivery at district, community and school levels are all part of the new plans. There is renewed emphasis on increasing budget lines and budget shares of district education offices. As part of the education strategic plan implementation process, district education work plans are being drafted with the 2015 educational targets in mind. Already, the introduction of a capitation grant scheme in 2004 for basic school operating budgets has led to an additional 17 percent rise in basic school enrolments. The Basic school system has also been expanded to include 2 years of kindergarten education (MOESS 2007).

Mapping the way forward

Ghana has accumulated a wealth of knowledge and experience from 50 years of educational development. On average, it has introduced one form of reform in every five years, but it is how the country utilises knowledge and experiences from these reforms that will determine the extent to which education and economic development will interact to achieve Ghana’s goal to become a middle level income country by 2020. The achievements of 50 years of education offer plenty of insights for the next 50 years. Today, access to all levels of education has improved significantly, but there are still old and new challenges that would require different approaches to make the interaction of education and economic growth mutually beneficial for accelerated development.

What reforms in education has taught Ghana is that it is much easier to fix the ‘hardware’ problems of education than the ‘software’ ones. With huge investments from internal and external sources structural and infrastructural problems of education can be fixed. With expanded facilities access can improve. However, completion rates remain the problem, especially at junior and senior secondary where low completion rates deprive the country of much needed educated youth prepared for work and for further education and training. It is easier to increase enrolments but much harder to make them stick.

For basic education, the next stage is for initiatives and incentives that can motivate demand from poorer sections of the country. Teacher supply and motivation is at the heart of this challenge. Major incentives for teachers in rural schools such as the provision of good housing with running water and electricity will be crucial. Unless this is done the large majority of children living in rural areas will continue to receive poor quality education. In financing terms, the challenge for the new reforms is about how best balanced growth in education can be achieved within realistic budget constraints with appropriate shares for basic education, post-basic education and higher.

For the first time in many years, Ghana's economy is showing signs of consistent growth under an increasingly stable macro-economic environment. This offers some real opportunities to use educational growth to accelerate economic development as happened with East Asian economies, where secondary education development became more closely linked to economic growth and emerging labour market needs (World Bank 2007). Also, improvements in the quantity and quality of secondary science and mathematics teachers are needed to increase the number of students studying science and mathematics subjects. There is also the issue of widening participation in secondary education. As access to secondary education improves its recurrent expenditure will need to grow beyond the current level of about 16% towards the international indicative benchmark of 20%-25% by 2015 (see Lewin 2006). This will most definitely mean reducing the share of tertiary education budget whilst targeting science and technology-based programmes for increased investment.

Fifty years of formal TVET has focused mainly on pre-employment training for specific skills. Today, global and local economies are much more dynamic and competitive with the informal and private sectors playing important roles. The challenge for the future of TVET in Ghana is how it can respond to markets that are highly competitive and dynamic, and how it can produce graduates with skills that can respond to demands of the local and “global networks of production, (technology) and trade” (World Bank 2007:1). On the basis of what is now known about TVET and development, creating more opportunities for further formal and informal learning in an environment of sustained economic growth is paramount. Fortunately, the economy of Ghana is showing signs that can make strategic investments in TVET and secondary education pay off as happened in East Asia.

Fifty years after independence, Ghana's education system has made significant strides, but now needs investments that can improve quality; provide equitable access for the disadvantaged; especially poor households and girls; strengthen decentralization of education services; improve teachers' work and living conditions particularly in rural areas; strengthen public-private sector partnerships in education service delivery; reduce overall recurrent spending on tertiary education and increase investment in science and technology related programmes in universities, research institutions and polytechnics. Finally, given the constraints on public resources available for education, a medium to long term planning framework will be required to track investments, progress and challenges. The journey has been difficult but the lessons offer hope for the future.

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