

Making Real the Dream of Education for All Through Open Schooling and Open Universities in Ghana

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Abstract

Although the last three decades have witnessed astronomical increases in enrollment in basic education, the challenges of access, equity, and quality continue to confront countries, especially in sub-Saharan Africa. In Ghana, education sector policies and reforms have been unable to deal with low transition rates from primary to junior high schools, from junior high schools to senior high schools, and from senior high schools to tertiary level. Children and young students who are unable to continue fail to reenter because of the absence of complementary or alternative pathways. The old paradigm of physical expansion continues to dominate policies of access. Although several developed and developing countries have used open schooling and open universities to widen access, the success of these programs has been found on strong policies, commitment of government, and huge investment in technology. Indeed, the future lies with open schooling and open universities.

Keywords

Education for All, open schooling, open universities, out-of-school youth, education reforms

Introduction

The Education for All (EFA) world initiative launched in 1990 (Jomtien, Thailand) and ratified in 2000 (Dakar, Senegal; Torres, 2011; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2000), and the Millennium Development Goals (MDGs; especially those on education) underscore the critical role that education plays in developing the knowledge and skills of people for a socially progressive society and a vibrant knowledge-based economy (Council of Ministers of Education, 2012). No country can improve the quality of life of its people without investment in human capital. Investment in human capital has been found to “foster growth through technological creation, invention and innovation as well as facilitating the uptake and imitation of new technologies” (Oxley, Le, & Gibson, 2008, p. 284).

In developing the knowledge and skills of a country’s workforce for the future, children, youth, and adults must be seen as valuable assets. This means that countries need to develop innovative and holistic ways of ensuring that children and the youth stay in school long enough to acquire the knowledge, skills, and competencies. As we get closer to 2015, there is enough evidence to show that the continuous investment by governments in school infrastructure alone will not help achieve the EFA objective as more children and youth are being denied the opportunity to continue their education at the basic, secondary, and university levels due to

issues of access, low quality of education, and high cost of education (Daniel, 2012).

In Ghana, only 60% of junior high school (JHS) leavers could enter senior high school (SHS) in 2014 (Republic of Ghana, 2014) because of inadequate places, poor performance in the basic Education Certificate Examination, and the criterion for selection of pupils into secondary schools in Ghana (Ministry of Education, 2013). At the university level, of the 111,140 students who qualified into the nine public universities in 2012/2013, only 66,589 could be offered admission into these public universities (National Council for Tertiary Education [NCTE], 2014). Although private universities in Ghana absorb some of these students, regular intake into public universities is still woefully inadequate in relation to the contributions of university education to national development. A more worrying phenomenon is the growing limited opportunities for out-of-school youth, and workers who face keen competition from the large cohort of new secondary school graduates competing for the limited spaces in the universities.

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What is needed is the creation of an environment for the nurturing of children and the youth to reach their full potential through sustainable approaches such as open schooling and open universities. While open schooling and open universities have been very popular in Asia and are addressing the issues of access, quality, and cost, the same cannot be said about sub-Saharan Africa. Although Ghana's educational policy documents have reiterated the need for open schooling and open university (Government of Ghana, 2008), they continue to be marginalized as governments continue to establish traditional universities, despite the fact that open schooling and open universities have the potential of helping deliver on the EFA and education MDGs mandate (Daniel, 2010). In addition, very little research has been conducted in the areas of open schooling and open universities as well as on their roles in addressing Ghana's challenges of access, equity, and quality. One of the gaps that this study seeks to bridge is to argue for the provision of open schooling and open universities as complementary or alternative pathways for out-of-school youth, adults, and workers seeking opportunities to continue learning if Ghana wants to meet the EFA goals by 2015. This study therefore examines educational policies and asks the following question: Are there complementary/alternative pathways toward reentry into formal education?

Educational Policies/Reforms and Challenges in Ghana

Since independence, Ghana's education has witnessed several reforms with the sole aim of making it more responsive to the needs of its consumers and to serve as the platform for accelerated development. In the 1980s, Ghana undertook major economic reform through the assistance of the International Monetary Fund [IMF] and the World Bank after a long period of macroeconomic turmoil. These reforms affected every sector of the economy, but much more education and health. In 1987, major education reforms were instituted at the basic, secondary, and tertiary levels of the education system, which included a reduction in the number of years of basic education, a revision of the curricula for primary, junior secondary school (JSS), and senior secondary school (SSS), and a consideration of the challenges facing tertiary education (Akyeampong, 2010; Atuahene & Owusu-Ansah, 2013; Girdwood, 1999; Ministry of Education, 1996; Thompson & Casely-Hayford, 2008).

In the early 1990s, Ghana took a decisive step to return to constitutional rule and in 1993, promulgated the 1992 Constitution with important provisions guaranteeing equal educational opportunities for all Ghanaians. Articles 25 and 38 provide an overarching educational policy for the country. Article 25 states that (a) basic education is free, compulsory, and available to all; (b) secondary education is to be generally available and accessible, and will be progressively made free; (c) higher education is also "equally accessible to all, on

the basis of capacity" and will be progressively made free; (d) functional literacy is to be encouraged and intensified; (e) the development of an adequately equipped school system will be "actively pursued"; (f) private schools may be established in accordance with the appropriate regulatory framework (Republic of Ghana, 1992).

Article 38 of the Constitution called for the implementation of the provision of free, compulsory, and universal basic education and also to ensure (subject to availability of resources) to provide the following: (a) equal and balanced access to secondary and other appropriate pre-university education, equal access to pre-university education, equal access to university or equivalent education, with emphasis on science and technology; (b) a free adult literacy program, and a free vocational training, rehabilitation, and resettlement of disabled persons; and (c) lifelong education (Republic of Ghana, 1992). In line with the provisions of the 1992 Constitution, the government in 1996 introduced the Free Compulsory and Universal Basic Education (FCUBE) in October, for a 10-year period (1996-2005).

By the end of the decade (1990-1999), while significant achievements were made in addressing the deterioration at all levels of the education, there were still some challenges. At the basic level, though gross enrollment ratio (GER) increased from 75% to 89% due to the implementation of FCUBE (DeStefano, Moore, Balwanz, & Hartwell, 2006), there were still many children of school-going age who were not in school. Dropout rate was still high at both primary and junior secondary levels. Gender disparities persisted with wide differences in three regions, namely, Northern, Upper East, and Upper West. The criterion referenced tests conducted through a U.S. Agency for International Development (USAID) project (PREP) in 1994 found that only 3% of P6 pupils attained satisfactory scores for English, and merely 1.5% for mathematics (World Bank, 1996). Enrollments in SSS age group (16-18) grew marginally from about 146,000 in 1987/1988 to 195,000 in 1997/1998 and 204,000 in 2000/2001. The number of public secondary schools increased from 240 to 474, whereas the number of technical institutions stood at 23 between 1996 and 2001 (Republic of Ghana, 2004).

At the tertiary level, before 1992, tertiary enrollment stood at 14,500. The upgrading of polytechnics to higher education institutions (HEIs) saw an increase in enrollment to tertiary education from 14,500 in 1993 to 30,000 in 1994 and 40,000 by 1997/1998 academic year. Other reforms in the tertiary sector included the establishment of a new university, the University of Development Studies (UDS) and the University College of Education, Winneba (UCEW) and a proposal for the introduction of Distance Education (DE) in some of the public universities. In spite of these changes, universities could not admit more students because of lack of infrastructure (Republic of Ghana, 2004).

Since 2000, various educational reforms and policies have been implemented to address issues of access, equity, and quality at all levels of the educational system. These reforms

and new policies were greatly influenced by the revised EFA goals at the Dakar Conference on Education and the MDGs both of which are to be attained by 2015. One of the major steps initiated to overhaul the education system was the establishment of the President's Committee on Education Reform in 2002 to review the entire education system of the country (Republic of Ghana, 2002). In its final report, *Meeting the Challenges of Education in the 21st Century*, the Committee recommended changes at the pre-school, basic, and secondary level, while calling for reform of curricula at all levels of the education system. One of the novelties of the reforms was the call for the establishment of open community colleges and an open university (Republic of Ghana, 2002).

To further strengthen the human resource base of the country, the government introduced the Education Strategic Plan (ESP; 2002-2015) in 2003. The Plan was heavily informed by both local (President's Committee on Review of Education Reforms in Ghana [ERRC], Meeting the Challenges of Education in the 21st Century and the GPRS (I) and international benchmarks such as the EFA and the MDGs). The Plan outlined policy directions, targets, and strategies for the next 13 years. The ESP was described as a whole sector plan, that is, a sector wide approach in which "every subsector and every area of focus within the education sector is and in which all internal and external development partners are invited to play a part" (Ministry of Education, 2003, p. 11). The purpose of the ESP was captured as "to assist in the poverty reduction process through the development of a learning society, thereby enhancing Ghana's human resource" (Ministry of Education, 2003, p. 13). In future, everyone will be able to participate meaningfully and successfully in the education process, and young people and adults, who have been excluded, will be able to access new opportunities for educational development (Ministry of Education, 2003). This statement meant that adequate steps were to be taken to ensure that opportunities were created for those excluded to be mainstreamed into the education system.

Some of the areas that were to be tackled to expand and improve post-basic education in the ESP included the following: (a) rehabilitation of 10% of existing SSS by 2015, (b) at least 75% of the districts to have a Model SSS by 2015, (c) establishment of 10 additional Technical and Vocational Institutes (TVIs) by 2015, (d) 50% enrollment growth in TVIs nationally by 2015, (e) teacher education subsumed within tertiary level by 2010, (f) tertiary education available for at least 15% of the post-secondary cohort by 2015, and (g) open university access by 2015. The Plan also recommended that the development of DE at all levels by 2012, development of a national policy on DE and for DE enrollments increased by 2% per annum over the plan period (Ministry of Education, 2003).

In 2004, the government issued a White Paper on Education Reform. The White Paper Reform outlines a "portfolio of reforms and objectives which cover the entire education sector, which, according to the recommendations, are to be

implemented from 2007 at the latest, and have major targets identified for 2015 and 2020" (Ministry of Education, Science and Sports [MOESS], 2006, p.16). The key objectives for the government White Paper were twofold. The first was to build upon the ESP commitments and ensure that all children have high-quality free basic education. The second objective was to ensure that second-cycle education was more inclusive and appropriate to the needs of young people. Other critical areas in the White paper were government's acceptance of the recommendation to establish an open university to provide avenues for work-study programs and lifelong education (Government of Ghana [GoG], 2004), to widen access to the 70% of the school population who end their education early and to about 30% of those who could not gain admission into universities, and to make public universities dual-mode institutions to promote DE in the country (GoG, 2004).

In 2008, a new Education Act (Act 778) was passed to provide for the establishment of an educational system intended to produce well-balanced individuals with the requisite knowledge, skills, values, aptitudes, and attitudes critical to the country's total development and the democratic advancement of the nation (GoG, 2008). The Education Act indicated that basic education shall comprise the following: (a) 2 years of kindergarten education, (b) 6 years of primary education, and (c) 3 years of JHS education. Second-cycle education was increased from 3 to 4 years of SHS, serving as a terminal point of entry into work or tertiary education and would be universal by 2020. Tertiary education shall include universities, polytechnics, or colleges of education. The Education Act further recommended the provision of distance learning programs at all levels of the educational system. In addition to the distance learning programs, the Act recommended a system of non-formal functional and lifelong educational programs (GoG, 2008). The Act further tasked the Ministry of Education and District Assemblies to establish open colleges at the district level.

In 2009, a new ESP (2010-2020) was introduced by the Ministry of Education to replace the ESP (2003-2015). The aim of the ESP (2010-2020) is to ensure that education makes a positive and permanent contribution to our national development plans, and the achievement of the EFA goals and the MDGs (Ministry of Education, 2009b). The guiding principles of the ESP are as follows:

- a. to eliminate gender and other disparities that arise from exclusion and poverty;
- b. to cater for excluded children in mainstream schools whenever possible;
- c. to improve the quality of learning and teaching, and to promote the culture of lifelong learning at all levels and for all ages;
- d. to modernize and extend information and communications technology (ICT), science education, technical and vocational education and training (TVET), and skills development at all levels;

Table 1. Statistics on Enrollment, Transitions, and Completion Rates at Primary, JHS, SHS, and Public Universities.

	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
Primary GER	94.9	94.9	96.4	96.5	105.0
Primary NER	88.5	83.6	77.8	81.7	84.1
Completion rate at primary	86.3	87.1	91.6	93.7	112.4
Transition rate from P6 to JHS I	—	94.6	92.4	89.5	94.5
JHS GER	80.6	79.5	79.6	80.6	82.2
JHS NER	47.8	47.5	46.1	46.1	47.8
Completion rate at JSH	75.0	66.0	66.9	66.8	70.1
Transition rate from JHS 3 to SHS—Male	51.7	52.3	56.7	50.9	60.3
Transition rate from JHS 3 to SHS—Female	51.1	52.1	58.4	50.4	62.3
SHS GER	33.9	36.1	36.5	37.1	36.8
SHS NER	17.7	18.5	24.3	23.6	23.6
SHS completion rate—Male	—	35.8	34.6	37.4	33.9
SHS completion rate—female	—	29.8	31.1	31.1	28.1
Public universities	93,973	102,548	107,058	115,452	—

Source. Ministry of Education (2012, 2013)

Note. JHS = junior high school; SHS = senior high school; GER = gross enrollment ratio; NER = net enrollment rate.

- e. to strengthen all forms of tertiary education;
- f. to develop an effective, efficient, and properly rewarding teaching service;
- g. to devolve delivery and fiscal systems of first- and second-cycle education to District Assemblies;
- h. to ensure periodic review of education grants and allowances;
- i. to make efficient savings in the education system;
- j. to strengthen monitoring and accountability in the education sector (Ministry of Education, 2009b).

The ESP (2010-2020) strategic objective for second-cycle institutions is to increase equitable access to high-quality second-cycle education that prepares young adults for the various options available within tertiary education and the workplace. On secondary education, the Plan advocates for free public and private second-cycle education and training for pupils who are eligible and also equal education opportunities for all academically eligible students for second-cycle education. For tertiary education, the strategic objective is to increase equitable access to high-quality tertiary education that provides relevant courses to young adults within colleges of education, polytechnics, and universities. At the tertiary level, the Plan will ensure equal tertiary education opportunities for all academically eligible students. Other areas to be tackled by government in the Plan include the establishment of two new public sector universities and the provision of open learning,

including a degree-awarding open university (Ministry of Education, 2009b).

Since 2000, several gains have been made because of the reforms and educational policies introduced within the education system (Table 1).

Impressive gross enrollment rate (GER) figures have been recorded at the primary level because of programs such as the school feeding and the capitation grant (Table 1). However, the net enrollment rate (NER) did not show a remarkable improvement as the GER. What this means is that there are children of school-going age who are still not in school. At the JHS level, while GER was around 82% in 2012/2013, the NER did not increase as anticipated (48% in 2012/2013; Ministry of Education, 2013). Completion rate was around 70%, while transition rate from JHS3 to SHS1 for both male and female hovered around 60% revealing a high dropout rate at the JHS and not a very high transition rate into secondary school. The high dropout rate which has a strong gender dimension is more pronounced in the three northern regions (i.e., Northern, Upper East, and Upper West), which also experience high poverty levels. Some of the reasons for the high dropout rate include the following: (a) student absenteeism, (b) direct and indirect costs of schooling, (c) geographical location (distance) of schools, and (d) difficulty accessing the school and low learning achievement (World Bank, 2011).

Transition rate from JHS3 to SHS1 is not only low (from 50.7% in 2011/2012 to 61.2% in 2012/2013), but continues

to pose a lot of worry to managers of schools. The low level of transition has been attributed to poor results from Basic Education Certificate of Examination (BECE) over the years. The BECE is taken at the end of the basic education cycle to determine who will or who will not progress to SHS and TVIs. According to the Ministry of Education, every year a significant proportion of children are unable to continue their education due to poor performances and lack of adequate placements in secondary schools. The poor performance in the BECE is affected by factors such as (a) the issue of access and the related challenge of infrastructure, (b) lack of trained teachers, (c) poor teaching techniques often adopted by teachers, and (d) parents inability to pay fees of wards (Ministry of Education, 2009a, 2013). This ultimately lowers the quality of Ghana's labor force and undermines the objectives of the country's human resource development of producing an educated population for accelerated socioeconomic development (Ministry of Education, 2009a).

At the post-basic level, the picture is not very different from what pertains at the basic level. The GER for the SHS increased slightly from 33.9% in 2008/2009 to 36.8% in 2012/2013, while the NER increased from 17.7% in 2008/2009 to 23.6% in 2012/2013, showing that students of the appropriate school age are not in school. Also a major challenge which could affect the attainment of gender parity in schools is the low NER and completion rates of girls compared with boys (Table 1), which means that girls in SHS are more likely to drop out of school than their male colleagues (Ministry of Education, 2012).

Transition rate from SHS3 to tertiary institutions is determined by performance in the West Africa Senior Secondary Certificate Examination (WASSCE). Pass rate in the WASSCE was found to have dropped from 59% in 2005/2006 to 40% in 2007/2008. There were marked differences in the pass rates by gender and regionally. Boys scored higher than girls on mathematics, science, social studies, and English-language examinations. Regionally, students in Northern and Upper East regions performed poorly compared with students in the Greater Accra and Ashanti regions (Ministry of Education, 2009a).

At the tertiary level, while there was a 104% increase in the public universities and 69% increase in polytechnics over the period 2001/2002 and 2007/2008 (World Bank, 2011), gross enrollment in tertiary education was 6% in 2007 (World Bank, 2011). According to the World Bank (2011), although the 6% rate was double the 3% in 2002, the country's participation rate lagged behind other sub-Saharan African countries such as South Africa (15.4%), Mauritius (14%), Nigeria (10.2%), Cape Verde (8.9%), Cote d'Ivoire (7.9%), Senegal (7.7%), and Cameroon (7.2%). Because GER for the secondary level grew from 38% in 2002 to 49% in 2007 and NER increased from 32% to 45% during the same period, considerable pressure continues to be mounted on HEIs for more admission opportunities (World Bank, 2011).

At the tertiary level, though there are increases in the number of students in tertiary institutions, these increases are not enough to guarantee access to the many students seeking admission to tertiary education in Ghana. Enrollment in the public universities rose from 102,543 in 2008/2009 to 115,452 in 2010/2011, and then decreased to 109,278 in 2011/2012. Polytechnic enrollment rose from 38,656 in 2009/2010 to 47,294 in 2011/2012. That in colleges of education rose from 27,589 in 2008/2009 to 27,580 in 2011/2012. Enrollment in private universities rose from 32,275 in 2010/2011 to 56,581 in 2011/2012 (Ministry of Education, 2012).

In spite of these increases in enrollment, several prospective applicants are unable to gain admission to tertiary education because of inadequate infrastructure. Aside the challenge of accessibility, participation in higher education depends on geographic location and the quality of SHS one attends. In addition, one must perform well in the WASSCE to gain admission to the public universities and also for one to have a good course to read. Other challenges facing tertiary education include absence of complementary modes of delivering tertiary education to meet rising demand for tertiary education, inadequate funding and fallen standards in teaching and learning outcomes.

Mapping Out Strategies Through Open and Distance Learning (ODL)

Various national development strategy documents and policies have reiterated the critical need for Ghana's rapid development through human resource development. The *Medium-Term National Development Policy Framework: Ghana Shared Growth and Development Agenda (GSGDA)*, 2010-2013, has evinced that

without a well-educated, skilled and informed population, the transformation of the key sectors of the economy, and the effort to raise living standards and productivity as the bases for wealth creation and the optimization of the potential of the economy will continue to stall. (Republic of Ghana, 2010, p. 74)

Experiences from the United Kingdom and Asia have shown that innovative approaches such as open schooling and open universities offer best strategies in addressing what Daniel (2012) described as the "iron triangle," which encompasses issues of access, low quality, and higher costs which face conventional schools and universities. Opening up education through the use of technology to provide flexible learning opportunities to individuals from the restraints of time and place has revolutionised access to both post-basic education and higher education. Today, all over the world, there are single-mode (often offered by open universities), dual-mode (conventional universities that offer DE), and mixed-mode (whereby the distance learning and the conventional streams are simultaneously applied, in the same program, for the same students; Bates, 1997).

Open schooling which is a response to the rapidly increasing demand for secondary education is defined by the Commonwealth of Learning (COL) as “the physical separation of learner from the teacher for much of the time and the use of unconventional teaching methodologies, and information and communications technologies (ICTs) to bridge the separation and provide the education and training” (cited in Abrioux, 2009, p. 3). Open schooling relies on study materials specially designed for learners. There is also an opportunity for learners to meet with facilitators on a regular basis for facilitators to clarify any difficulties students may have experienced when working through learning materials (Rumble & Koul, 2007). In addition to the facilitator, the learners could contact subject matter experts through telephone or e-mails (Rumble & Koul, 2007). There are three broad types of open schooling: (a) complementary, which offers the standard national curriculum in an open manner (e.g., Namibian College of Open Learning [NAMCOL]); (b) alternative, which offers an alternative curriculum targeted toward more vocationally oriented programs (e.g., National Indian Open School [NIOS]); and (c) integrated, which does not only cater for a large student body but also acts as a catalyst, a resource, a clearing house, and a laboratory for the whole national school system (e.g., Vancouver Learning Network; Daniel, 2010; Rumble & Koul, 2007).

Open universities are usually state-led intervention (Tait, 2008). Tait (2008) argues that open universities are highly political institutions instituted because of the inadequacy of the higher education sector to meet the demands of society in terms of human capital. They are therefore oriented toward massification of higher education (Kanwar, 2012). The uniqueness of open universities is the openness which is manifested at three levels: open admissions, distance learning at scale, and open curricula (Daniel, 2011). In terms of the openness, the Open University of United Kingdom and Athabasca University in Canada have no admission requirements, whereas some open universities set minimum entry requirements (e.g., the National Open University of Nigeria [NOUN]). Tait (2008) has identified the functions of open universities which are as follows:

1. to help national and economic development;
2. to respond to public demand;
3. to widen access to new groups of students;
4. to change the higher education system in terms of quality and innovation.

So what is the history of open schooling and DE in Ghana?

Experiences of Open Schooling and DE in Ghana

Open schooling by correspondence in Ghana could be traced to the mid-1970s when the Institute of Adult Education ran correspondence courses aimed at the West African Examinations Council General Certificate of Education

(GCE) Ordinary Level subjects for students who had dropped out of school and for workers. The correspondence course comprised course notes to learners in addition to periodic face-to-face meetings to provide an opportunity for students to discuss their problems with their course tutors and also help reduce the loneliness experienced by many distance learners (Greenstreet, 1988-1989). However, lack of funding and challenges of not being able to produce the course notes led to the discontinuation of the program in the 1980s.

After several years of abeyance, the President’s Special Initiative on Distance Learning (PSI-DL) was introduced in 2002 to make operational in Ghana alternative models of education to complement Government’s efforts of ensuring that Ghana attains the target of “Education for All” by 2015 (Kwarteng & Donkor, n.d.). The program was in three phases. Phase 1 of the program began in 2003 with the broadcasting of lessons on various subjects such as English, mathematics, and science at the junior and senior school levels on the national television station to bridge the gap between the well-endowed and poorly endowed schools especially in the rural areas, as well as for the youth needing remedial to improve upon their grades. Phase 2 of the PSI-DL planned an open schooling in Technical and Vocational Education and Training with the support of the COL, to ensure that unemployed youth have the opportunity to acquire skills to earn a livelihood and enhance their chances on the job market (Kwarteng, 2011; United National Conference on Trade and Development [UNCTAD], 2011). In 2007, PSI-DL started open schooling at the pre-tertiary level with the piloting of the teaching and learning by distance of two courses, Block-Laying and Concreting and Catering, using study centers in six existing TVET institutions and in five prisons in Ghana (Donkor, 2011).

Between 2002 and 2008, a lot was achieved under the PSI-DL. A total of 1,040 video lessons were produced in JHS 1 to 3 English and mathematics and SHS 1 to 3 English and mathematics. The Phase II witnessed the establishment of seven pilot learning centers around the country in partnership with non-governmental organizations and the Ghana National Association of Teachers (Du Vivier, 2010). Each center was equipped with a television and DVD player to enable out-of-school learners and those seeking remedial instruction to view the video lessons (Du Vivier, 2010). Printed study guides were produced for two TVET courses—Block-Laying and Concreting and Catering using study centers in six existing TVET institutions and in five prisons in Ghana (Donkor, 2011). Finally, there was the inclusion of prison mates in Nsawam, Kumasi, and Ankaful in the education program of the PSI-DL to help them prepare for examination at three levels—BECE, WASSCE, and National Vocational Training Institutes (NVTI) trade tests (Donkor, 2011).

However, several challenges confronted the program, including inadequate funding devoted to the PSI-DL, the relatively high cost of content production, the lack of

television sets and/or electric power in a number of schools (particularly rural ones), schools requesting CDs to be distributed free of charge, and a lack of incentives in place to get teachers and schools interested in engaging with the program (UNCTAD, 2011). The PSI-DL program was located at the Office of the President and not at the Ministry of Education. This made coordination of activities and adequate cooperation with the ICT for Education program implemented by the Ministry of Education very difficult.

To restructure the PSI-DL program, a cabinet decision in 2010 transferred the responsibility for the promotion of DE from the Office of the President to the Ministry of Education (2010). Accordingly, the activities previously carried out by the PSI-DL were taken over by a new body—the Centre for National Distance Learning and Open Schooling (CENDLOS) that reports directly to the Minister of Education (Du Vivier, 2010). While the legal status and structure of CENDLOS are being developed, the Center is tasked with the following (Du Vivier, 2010):

- continue providing support for the programs devised by the PSI-DL;
- draw up agenda for future open schooling programs;
- compile an inventory/directory of institutions in Ghana that offer education or training through the DE or ODL mode;
- seek to harmonize and rationalize ODL activities across the education and training systems;
- constitute a think tank to advise institutions and researchers on new developments in ODL;
- organize capacity-building programs for ODL practitioners;
- foster collaboration between like-minded bodies, both inside and outside Ghana;
- establish models for assuring the quality of ODL programs in Ghana;
- make recommendations to Government on appropriate ODL technologies in the education and training sectors.

After the expansion of the scope of the institution, CENDLOS has adopted a complementary approach where materials have been developed for use by the traditional SHSs and JHSs, although a lot of attention has been paid to the SHSs targeting the production of materials in all the core elements, such as physics, chemistry, mathematics, and integrated science.

DE at the University Level

The idea of widening access through DE at the tertiary level could be traced to the 1980s when the Modular Teacher Training Program (MTTP) was introduced to upgrade untrained teachers academically and professionally through some form of DE (Commonwealth of Learning (2005)).

However, this program was abandoned because of certain difficulties it faced. Despite the initial challenges that DE faced, the Government of Ghana felt DE was a viable complement to conventional education especially at the tertiary level. This conviction was based on the fact that universities had not expanded in a corresponding way to be able to absorb even half of the secondary school graduates (Ministry of Education, 1996).

To widen access at the tertiary level, the Government of Ghana decided to introduce tertiary level DE under the Ghana National Tertiary Level Distance Education Program with the following objectives: (a) to democratize access to higher education; (b) to provide an alternative, off-campus channel for tertiary education for qualified and desirous people; (c) to provide a complementary avenue to higher forms of education provided by the traditional, residential universities and reduce the pressure they experience; (d) to provide an opportunity to those who have the requisite qualifications but have been prevented from having access to tertiary education by various circumstances, such as place of residence, work, and family; and (e) to make the acquisition of degree more flexible, especially for older adults who do not have the desire to join younger students on campus (Ministry of Education, 1996). Those who were to be targeted include young qualified adults, adult workers, women, diplomats, graduates who would want to shift to new areas; and lifelong learners who want to learn for the sake of learning (Ministry of Education, 1996).

To actualize the objective of widening access to tertiary education through dual-mode of delivery of DE, between 1991 and 1994, government sponsored a number of surveys to assess the DE needs of Ghana (Mensah & Owusu-Mensah, 2002). These surveys culminated in the selection of four universities: University of Ghana, University of Cape Coast, University of Science and Technology (now Kwame Nkrumah University of Science and Technology [KNUST]), and UCEW (now University of Education, Winneba), to offer DE programs (Mensah & Owusu-Mensah, 2002). Of these four universities, it was only the UCEW which was able to commence its program in 1996 as a result of support from the then British Overseas Development Administration (ODA). UCEW took off by admitting a first batch of 196 students to pursue Post-Diploma Bachelor of Education degree (Mensah & Owusu-Mensah, 2002).

Since 2000, DE at the university level has come to stay. Student enrollment in distance learning program in the public universities rose from 31,994 in 2008/2009 to 63,296 in 2011/2012. The University of Ghana Distance Education which started in 2007/2008 with 700 students now has 8,331 students in 2011/2012. The KNUST which had student population of 322 in 2007/2008 increased to 4,787 in 2011/2012. The two public universities responsible for the training of teachers have contributed higher figures to DE at the tertiary level (University of Cape Coast—13,636 in 2007/2008 and 29,914 in 2011/2012; University of

Table 2. Student Enrollment at Public Universities, 2012/2013.

University	Applicants qualified			Admission offered		
	Male	Female	Total	Male	Female	Total
University of Ghana	23,761	18,322	42,083	11,728	8,561	20,289
Kwame Nkrumah University of science and Technology	21,044	10,979	32,023	14,223	6,668	20,891
University of Cape Coast	7,500	3,852	11,352	4,041	2,298	6,339
University of Development Studies	5,495	3,922	9,417	4,089	3,034	7,123
University of Education, Winneba	5,139	2,341	7,480	4,110	1,603	5,713
University of Mines and Technology	1,302	133	1,435	557	80	637
University for Energy and Natural Resources	175	54	229	128	26	154
University for Health and Allied Sciences	325	136	461	140	99	239
University for Professional Studies	3,726	2,934	6,660	3,007	2,197	5,204
Total	68,467	42,673	111,140	42,023	24,566	66,589

Source. National Council for Tertiary Education (NCTE; 2014).

Education—7,954 in 2007/2008 and 20,264 in 2011/2012; Ministry of Education, 2013).

There is ample evidence to show that the universities are still struggling with the demand for university education by students due to lack of adequate infrastructure (Table 2). Male students seeking admission to universities outnumber female students. Enrollment into DE programs at the public universities shows steady increases. In 2012/2013, University of Ghana had a total population of 9,175 students (62% male and 38% female). KNUST had a total population of 6,453 students (79% male and 21% female). The two public universities responsible for the training of teachers continue to admit more students into their DE programs (University of Cape Coast—28,348 comprising 61% male students and 39% female students; University of Education—15,563 comprising 43% male students and 57% female students; NCTE, 2014).

In spite of the dramatic increases in student intake, there is ample evidence that demand for higher education far outweighs the availability of space for students seeking admission to universities. Even the introduction of DE in conventional universities has failed to transform higher education because of inflexibility in the way their programs are organized. Indeed, Ghana's 6% GER at the tertiary level is still not the optimum that can propel the country toward a middle-income status (World Bank, 2011). Major reforms need to be instituted at the secondary school and tertiary levels to offer more pupils and students the opportunity to continue learning through more diversified pathways. In 2010, the Committee on Open University was reconstituted to review the previous work on the establishment of the open university. As the country makes preparation to scale up open schooling and establish an open university, the critical questions which this article introduces and attempts to find answers to are as follows:

Research Question 1: How open schooling and open university could be sustainable?

Research Question 2: What are the prospects and challenges of open schooling and open university?

Prospect and Challenges of Open Schooling and Open University in Ghana

Various studies conducted in Asia, the United Kingdom, Australia, and Canada and lately Africa have shown that there are huge benefits for open schooling and open universities (Daniel, 2006; Daniel & Mackintosh, 2003). One of the major prospects of open schooling and open university is their ability to address issues of access and equity by opening up opportunities driven by national goals of workforce development (King, 2012). Widening access and improving participation through open education (Daniel, 2012) allow out-of-school youth, working mothers, and people of disability, young girls and those who hitherto have been denied the opportunity to continue their education because of geographical locations to have access to higher education. Indeed, both open schooling and open university may remove most of the restrictions faced by girls and women and improve gender equity in education, especially at the secondary and university levels in Ghana (Bhushan, 2008; Kwapong, 2008).

Another major benefit of open schooling and open universities is the extensive use of ICT. Starting with print-based, the introduction of the Internet has changed the way DE is offered globally (Daniel, 2013). Today, the adoption of technologies such as audio, video, teleconferencing, the Internet, and mobile technologies has aided open schools and open universities to reach large populations of students (Daniel, 2013). The Government of Ghana recognizes the critical role of ICT in education and has developed an ICT in Education Policy, which recognizes the need to integrate ICT in the teaching and learning at all levels of the educational system. In addition, there has been the deployment of fiber infrastructure to provide high-speed backbone for Internet access and usage by all Ghanaians.

While this sounds remarkable for overall national development, there are serious gaps in access and usage between urban and rural areas in Ghana which could affect the sustainability of open schooling and open university. ICT infrastructure such as well-equipped computer laboratories and broadband access and e-learning platforms in Ghana remains major challenges in schools especially to those in the rural areas and universities. Unreliable supply of electricity is another familiar challenge in Ghana. There are still some communities in the rural areas of Ghana not connected to the National Electricity Grid and therefore do not have electricity at all.

Although significant improvements have occurred in the area of Internet penetration from estimated 5.2% in 2010 (National Communications Authority [NCA], 2011) to about 10% in 2011 ("Internet Penetration Grew by 10 Percent Last Year," 2012), there are serious regional imbalances in access and use of the Internet. Most people in the rural areas do not have access to Internet connectivity. Whereas 12.7% of urban dwellers used the Internet in 2010, only 2.1% of rural dwellers did (Ghana Statistical Service, 2012). In 2012, only 17.1% of Ghanaians used the Internet citing cost as the main reason for their non-use of the Internet (Alliance for Affordable Internet, 2014). Greater Accra has the highest penetration of users (27.7%), whereas the Upper East has the lowest penetration of users being 6.1% (Ghana Investment Fund for Electronic Communication [GIFEC], 2013). Although Ghana has a high mobile broadband penetration due to the increased use of smartphones, a Ministry of Education policy banning the use of mobile phones in schools makes it very difficult to introduce mobile technologies such as smartphones as teaching and learning tools. If government does not address the "digital divide" between the urban schools and the rural schools, any effort to democratize education through open schooling and open university would rather aggravate the divide.

Another benefit of the use of digital technology is the production and sharing of open educational resources (OERs), which include lessons, modules, full courses/programs, guides, e-texts, articles, audio tracks, videos, multimedia, and any other learning materials (cited in McKerlish, Ives, & McGreal, 2012). OERs have the advantage of being freely available online and have Creative Commons licenses that (among other things) allow for them to be reused for free in a variety of contexts (D'Antoni, 2009; Downes, 2007). The use of OERs in open schooling and open universities has improved students' access to high-quality learning materials across all levels of the educational system (Kanwar, 2012) and allowed lecturers more time to engage students and help them complete their courses on time (Mishra, 2012). OERs have been used as supplementary textbooks in rural areas where there has been shortage of textbooks (Kanwar, 2013).

In Ghana, although OER has made little impact on the education sector, some institutions have adopted OERs. At the Department of Early Childhood Development of the

University of Education, Winneba (formerly UCEW), lecturers have adapted the Teacher Education in sub-Saharan Africa (TESSA) OERs for early childhood education and have produced a set of videos based on field experiences for on-campus teaching practice (Anamuah-Mensah & Wolfenden, n.d.). In addition, two Colleges of Health Sciences of Medical Schools at the University of Ghana and the KNUST have been able to produce health OERs to complement their face-to-face teaching in courses that were perceived as difficult for students and to deal with the challenge of large class sizes and inadequate faculty size (Adanu et al., 2010; Omollo, Rahman, & Yebuah, 2012).

In spite of the prospects of open schooling and open universities, one cannot overlook the challenges that these institutions face in countries that have practiced them for many years. If Ghana is to derive the maximum benefit from open schooling and open universities, then there is a need to recognize and address these challenges, so that when these institutions are established they would be sustainable. One of the challenges that face open schooling and open universities is the political will of governments to push the agenda of transforming the educational system through open schooling and open universities. Strong political commitment from government is needed to ensure that these programs have the necessary funding and resources for their sustainability, to remove doubts in the minds of Ghanaians that these programs are "second rate" to the conventional schools and universities.

Funding from government has been the backbone of open schooling and open universities in both developed and developing countries. Kinyanjui (1998) has argued that in Africa, most DE institutions have been established without adequate funding and therefore their rapid growth and expansion outstrip funds allocated resulting in low quality and efficiency of services and operations. Sustainable funding sources for open schooling and open university needs to be worked out with all stakeholders, so that these programs will not face the perennial challenge of adequate and irregular disbursement of funds that conventional secondary schools and universities have experienced in Ghana. Sustaining open schooling and open university means huge initial investments costs in the areas of material production, motivating course writers, improved technological infrastructure and a well-established support system as well as good motivation packages for those teachers and lecturers who would be recruited to develop the learning material. If fees are going to be one of the avenues of raising funds, then there must be a clear-cut policy on fees so that those who have the resources to pay will not hijack the programs to the disadvantage of those who are poor and cannot pay high fees.

Another challenge will be the determination of the minimum admission requirements. In Nigeria, NOUN admits students into their program based on the minimum academic standard for all universities that was approved by the National Universities Commission of Nigeria (Okonkwo, 2012). Ghana has set the minimum admission criteria for both SHS

and universities, and the National Accreditation Board (NAB) approves all courses at the tertiary level. The same process could be done for ODL programs, so that students who are on ODL have the same parity of esteem. One of the challenges facing dual-mode institutions in Ghana is the perception among students and parents that attending conventional face-to-face universities gives students some leverage over DE students. This perception makes it difficult for DE institutions to attract young students to their programs.

Another challenge is the absence of a coherent policy on ODL in Ghana. According to the Director of CENDLOS,

We do not have a full policy on open and distance learning, so whether you dream of open university, open polytechnic, open college, we do not have a full policy. We are in the process of developing one in collaboration with the Open University UK and the Commonwealth of Learning. (J. Mallet, personal interview, April 23, 2014)

Du Vivier and Ellis (2009) have argued for a coherent policy development for ODL in general at both the national and the institutional levels (Du Vivier & Ellis, 2009). Barasa (2010, cited in Biao, 2012) summed up the need for a policy on ODL in the following:

Most open universities . . . are open universities trapped in residential national education policy environments. National regulatory agencies prescribe the minimum entry academic qualifications that learners must possess in order to be admitted into degree programmes . . . This closes the window on openness as to admission and undermines the very philosophy upon which ODL is predicated . . .

Du Vivier and Ellis (2009) have argued that for a policy to be successful and accepted by stakeholders within and outside ODL systems, government must be involved in policy development for the following reasons: (a) to give stature and credibility to an educational model whose innovative approaches and underserved clientele are too easily sidelined by most education stakeholders; (b) to provide stability and protection from the vagaries of government and inter-institutional politics; and (c) to ensure that key government decision-makers are informed through policy about the intrinsic differences between ODL and conventional schooling and dual-mode universities and how these can affect key performance indicators and measure outputs (Du Vivier & Ellis, 2009).

Conclusion

As Ghana moves toward the goal of EFA in 2015, the situation on the ground reveals serious gaps which when not addressed will make it difficult for the country to meet the goal. We continue to see progress in education more on widening access at the basic level through the traditional “education reform” mentality. However, there are no complementary

or alternative pathways for children, adolescent, young people, and adults who are unable to continue due to poor performances in national examinations and lack of adequate school infrastructure to continue learning. Although Ghana’s educational documents and strategic plans articulate some efforts of introducing open schooling and open university to address the challenges of access, equity, and quality of education and cost, very little effort has been made to implement these strategies to the full.

It is quite obvious that government cannot continue to lay emphasis on the construction of more schools and universities as avenues of widening access to the neglect of investment in open schooling and open university. Ghana needs an ODL Policy to drive the agenda of meeting the educational needs of children, the youth, and working adults. Countries that have implemented open schooling and open universities establish policies and structures to ensure the sustainability of these programs. There is need for a policy to ensure that the ODL sub-sector is less susceptible to changes in government. Issues of accreditation and equivalency have to be clearly articulated in that policy document, as several institutions may spring up to organize open schooling in the country. For open universities, the major reason why we have not established any in Ghana is due to lack of political will of governments and funding. Although there is always the fear that quality of education may be compromised, there is enough evidence from open universities in United Kingdom, Canada, and India to show that with effective development of structures and deployment of technologies, quality education can be addressed. Attention needs to be given to the production of OERs to complement the challenge of lack of adequate textbooks both at the Junior and SHS levels and universities. Above all, government needs to develop an ODL e-learning Policy to provide support for the deployment of digital technologies and affordable broadband and Internet services across the length and breadth of the country to address the “digital divide.”

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References

- Abrioux, D. (2009). Special issues and practices in open schooling. In D. Abrioux & F. Ferreira (Eds.), *Open schooling in the 21st century* (pp. 1-5). Vancouver, British Columbia, Canada: Commonwealth of Learning.
- Adanu, R., Adu-Sarkodie, Y., Opare-Sem, O., Nkyekyer, K., Donkor, P., Lawson, & Englebert, N. (2010). Electronic learning and open educational resources in the health sciences in Ghana. *Ghana Medical Journal*, *44*, 159-162.

- Akyeampong, K. (2010, April). Educational expansion in Ghana: A review of 50 years of challenge and progress [CREATE PATHWAYS TO ACCESS, Research Monograph No. 33]. Brighton, UK: University of Sussex.
- Alliance for Affordable Internet. (2014). *Affordable internet in Ghana: The status quo and the path ahead*. Washington, DC: Author. Available from www.a4ai.org
- Anamuah-Mensah, J., & Wolfenden, F. (n.d.). *TESSA open education resources: A sustainable approach to teacher education in Sub-Saharan Africa*. Central Region, Ghana: TESSA Office/SACOST, University of Education, Winneba.
- Atuahene, F., & Owusu-Ansah, A. (2013). A descriptive assessment of higher education access, participation, equity, and disparity in Ghana. *SAGE Open*, 3(3), 1-16. doi:10.1177/2158244013497725
- Bates, T. (1997). The impact of technological change on open and distance learning. *Distance Education*, 18, 93-109.
- Bhushan, P. (2008). Connecting or dividing? Examining female learners' information and communication technology access and use in open and distance learning. *Open Learning: The Journal of Open, Distance and e-Learning*, 23, 131-138.
- Biao, I. (2012). *Open and distance learning: Achievements and challenges in a developing sub-educational sector of Africa*. INTECH, Creative Commons License. Available from <http://creativecommons.org/licenses/by/3.0>
- Commonwealth of Learning (2005). *Strategies for Sustainable Open and Distance Learning*. Volume six. Vancouver: Canada Council of Ministers of Education. (2012). *Adult learning and education: Canada Progress Report for the UNESCO Global Report on Adult Learning and Education (GRALE) and the end of the United Nations Literacy Decade*. Toronto, Ontario, Canada: Author.
- Daniel, J. (2006, February 8-10). *Open schooling for the better working*. An International Conference on Vocational Education and Training through Open Schooling: Challenges and Future Strategies held in Kovalam, Kerala, India.
- Daniel, J. (2010). Education for the 21st century: Time for open schools to raise their game. *COMOSA Journal of Open Schooling*, 1(1), 1-8.
- Daniel, J. (2011, June 18). *Open schooling: The next frontier for distance education*. 20th Anniversary Meeting of EDEN Senior Fellows, Dublin, Ireland.
- Daniel, J. (2012, April 24). *The future of (open) education*. Paper presented at UNESCO Bangkok Special Seminar 2012 (No. IV), Bangkok, Thailand.
- Daniel, J. (2013, February 4). *Education across space and time*. Paper presented to Open and Distance learning Association of Australia 2013 Summit, Sydney, Australia.
- Daniel, J., & Mackintosh, W. (2003). Leading ODL futures in the eternal triangle: The mega-University response to the greatest moral challenge of our age. In M. Moore & W. Anderson (Eds.), *Handbook of distance education* (pp. 811-827). London, England: Lawrence Erlbaum.
- D'Antoni, S. (2009). Open educational resources: Reviewing initiatives and issues. *Open Learning: The Journal of Open, Distance and e-Learning*, 24, 3-10.
- DeStefano, J., Moore, A., Balwanz, D., & Hartwell, A. (2006). *Meeting EFA: Reaching the underserved through complementary models of effective schooling*. Washington, DC: Academy for Educational Development and USAID-funded EQUIP2 Project.
- Donkor, F. (2011). Assessment of learner acceptance and satisfaction with video-based instructional materials for teaching practical skills at a distance. *The International Review of Research in Open and Distance Learning*, 12(5), 74-92.
- Downes, S. (2007). Models for sustainable open educational resources. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 29-44.
- Du Vivier, E. (2010). *A sustainable open schooling system for Ghana* (Report of a short-term consultancy to devise strategies for the Centre for National Distance Learning and Open Schooling). Vancouver, British Columbia, Canada: Commonwealth of Learning.
- Du Vivier, E., & Ellis, J. (2009). Formulating policies to enable the development of open schooling. In D. Abrioux & F. Ferreira (Eds.), *Open schooling in the 21st century* (pp. 21-33). Vancouver, British Columbia, Canada: Commonwealth of Learning.
- Ghana Investment Fund for Electronic Communications. (2013). *Study of the digital divide in Ghana*. Accra, Ghana: Ministry of Communications.
- Ghana Statistical Service. (2012). 2010 population & housing census: Summary report of final results. Accra, Ghana: Author.
- Girdwood, A. (1999). *Tertiary education policy in Ghana: An assessment (1988-1998)*. Washington, DC: World Bank.
- Government of Ghana. (2004). *White paper on the report of the education reform review committee*. Accra, Ghana: Ministry of Education, Youth and Sports.
- Government of Ghana. (2008). *Education Act 778*. Accra, Ghana: Assemblies Press.
- Greenstreet, M. (1988, December 27-1989, January 4). *University-based adult education: The Ghanaian experience*. In the Report of the Fortieth Annual New Year School organised in commemoration of the 40th Anniversary of the Institute of Adult Education, Commonwealth Hall, University of Ghana, Legon.
- Internet penetration grew by 10 percent last year. (2012, March 16). *GhanaWeb*. Retrieved from <http://www.ghanaweb.com/GhanaHomePage/business/artikel.php?ID=232902>
- Kanwar, A. (2012, September 27). *Four decades of open and distance learning: Future directions*. Keynote presented at the International Conference on ICT Culture in Education, Delhi, India.
- Kanwar, A. (2013, June 7). *Democratising higher education through OER: What are the possibilities*. Paper presented at the International Conference on Science and Technology for Economic Diversification, Port of Spain, Trinidad and Tobago.
- King, B. (2012). Distance education and dual-mode universities: An Australian perspective. *Open Learning: The Journal of Open, Distance and e-Learning*, 27, 9-22.
- Kinyanjui, P. (1998, May). *Distance education and open learning in Africa: What works or does not work*. Paper presented at the EDI/World Bank Workshop on Teacher Education Through Distance Learning, Addis Ababa, Ethiopia.
- Kwapong, O. (2008). A case for using Open and Distance Learning (ODL) to widen access to tertiary education for women. *International Journal of Instructional Technology & Distance Learning*, 5(5), 1-11.
- Kwarteng, A., & Donkor, F. (n.d.). *Expanding the horizon of education: The case of president's special initiative on distance learning*. Accra, Ghana: Ministry of Trade, Industry, Private Sector Development and Presidential Special Initiatives.

- McKerlish, R., Ives, C., & McGreal, R. (2012). Measuring use and creation of open educational resources in higher education. *International Review of Research in Open and Distance Learning*, 14(4), 90-102.
- Mensah, S., & Owusu-Mensah, F. (2002). *Priorities and strategies for capacity building in tertiary distance education for human resources development in Ghana* (A final report prepared for the World Bank). Accra, Ghana: University of Education, Winneba.
- Ministry of Education. (1996, September 30-October 5). *The development of education: 1994-1996*. National report presented at the forty-fifth session of the International Conference on Education, Geneva, Switzerland.
- Ministry of Education. (2003). *Education strategic plan 2003-2015. Volume 1: Policies, targets and strategies*. Accra, Ghana: Author.
- Ministry of Education. (2009a). *Education sector performance report*. Accra, Ghana: Author.
- Ministry of Education. (2009b, November). *Education strategic plan (2010-2020). Volume 1: Policies, strategies, delivery, finance*. Accra, Ghana: Government of Ghana.
- Ministry of Education. (2010). *Education sector performance report*. Accra, Ghana: Author.
- Ministry of Education. (2012). *Education sector performance report*. Accra, Ghana: Author.
- Ministry of Education. (2013, July). *Education sector performance report*. Accra, Ghana: Author.
- Ministry of Education, Science and Sports. (2006). *Preliminary education sector performance report 2006*. Accra, Ghana: Author.
- Mishra, S. (2012, November 14). *Openness in education: Some reflections on MOOCs, OERs and open and distance learning*. Keynote presented at the International Council for Open and Distance Education (ICDE) Standing Conference of Presidents (SCOP), Hamdan Bin Mohammed eUniversity, Dubai.
- National Communications Authority. (2011). *Broadband Wireless Access (BWA) licenses in the 2500 MHz-2690 MHz band: Selection and award procedures*. Accra, Ghana: Author.
- National Council for Tertiary Education. (2014). *Enrolment figures for tertiary institutions*. Accra, Ghana: Author.
- Okonkwo, C. (2012). Assessment of challenges in developing self-instructional course materials at the National Open University of Nigeria. *International Review of Research in Open and Distance Learning*, 13(2), 1-6.
- Omollo, K., Rahman, A., & Yebuah, C. (2012). Producing OER from scratch: The case of Health Sciences at the University of Ghana and the Kwame Nkrumah University of Science and Technology. In J. Glennie, K. Harley, N. Butcher, & T. van Wyk (Eds.), *Open educational resources and change in higher education: Reflections from practice* (pp. 57-76). Vancouver, British Columbia, Canada: Commonwealth of Learning.
- Oxley, L., Le, T., & Gibson, J. (2008). Measuring human capital: Alternative methods and international evidence. *The Korean Economic Review*, 24, 283-298.
- Republic of Ghana. (1992). *The 1992 constitution*. Accra, Ghana: Assembly Press.
- Republic of Ghana. (2002). *Meeting the challenges of education in the twenty-first century* (Report of the President's Committee on review of Education Reforms in Ghana). Accra, Ghana: Adwinsa.
- Republic of Ghana. (2004). *The development of education: National report of Ghana by the basic education division of the Ghana Education Service for presentation at the forty-seventh session of the International Conference on Education (ICE) Geneva*. Accra, Ghana: Ministry of Youth, Science and Sports.
- Republic of Ghana. (2010). *Medium-term national development policy framework: Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013. Volume 1: Policy framework*. Accra, Ghana: National Development Planning Commission.
- Republic of Ghana. (2014, February 25). *Structural transformation: Rising to the challenge*. State of the Nation Address presented by His Excellency John Mahama to the 6th Parliament of the 4th Republic of Ghana, Parliament House, Osu, Accra, Ghana.
- Rumble, G., & Koul, B. (Eds.). (2007). *Open schooling for secondary & higher secondary education: Costs and effectiveness in India and Namibia*. Vancouver, British Columbia, Canada: Commonwealth of Learning.
- Tait, A. (2008). What are open universities for? Open learning: The journal of open. *Distance and e-learning*, 23(2), 85-93.
- Thompson, N., & Casely-Hayford, L. (2008, March). *The financial and outcomes of education in Ghana* (RECOUP Working Paper No. 16). Cambridge, UK: Department for International Development, University of Cambridge.
- Torres, R. (2011). Lifelong learning: Moving beyond Education for All (EFA). In J. Yang & R. Valdes-Cotera (Eds.), *Conceptual evolution and policy developments in lifelong learning* (pp. 40-50). Hamburg, Germany: UNESCO Institute for Lifelong Learning.
- United National Conference on Trade and Development. (2011). *Science, technology and innovation policy review: Ghana*. Geneva, Switzerland: United Nations.
- United Nations Educational, Scientific and Cultural Organization. (2000). *World education forum. The Dakar framework: Education for all—Meeting our collective commitments* (Adult Education and Development, No. 55, pp. 19-27). Bonn, Germany: DVV International.
- World Bank. (1996, May). *Basic education sector improvement program* (Staff Appraisal Report, Report No. 15570-GH). Washington, DC: Population and Human Resources Division, African Region.
- World Bank. (2011). *Education in Ghana: Improving equity, efficiency and accountability of education service delivery* (Report No. 59755-GH). Washington, DC

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