DISTANCE EDUCATION IN GHANA: AN OVERVIEW OF ENROLMENT AND PROGRAMME PATTERNS

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ABSTRACT
This paper discusses Distance Education trends and patterns in enrolments in public universities and private distance learning institutions in Ghana. The analysis covers a seven-year period (2008/2009 – 2014/2015) using data collated by the Planning Department of the National Council of Tertiary Education (NCTE). Using descriptive statistics, a general overview of the distance education enrolment patterns and the programmes offered at both the graduate and the undergraduate levels is discussed. The trends show that University of Education, Winneba (UEW) and University of Cape Coast (UCC) together account for over 70% of all distance enrolment in public universities in Ghana. Distance enrolment has seen a 39.4% increase in the last two years. Graduate enrolment was 5% of total distance enrolment over the last seven years. Kwame Nkrumah University of Science and Technology (KNUST) enrolls 85% of all graduate distance students.

Keywords: Graduate, Undergraduate, Enrolment Patterns, Trends, Distance Education and Learning

1. Introduction
The path to development is aided by many things but common to all such efforts is learning and learning on a massive scale. The challenge of learning is so huge in contemporary times that traditional methods of teaching and learning are not sufficient to address it. Hence, just as technology has helped improve both quantity and quality of products and services, so must technology be applied to learning. This is the only way to address the learning challenge (Daniel & Mallet, 2008).

The increasing demand for education over the years has led tertiary education providers and regulators to introduce interventions to increase access so as to meet the growing demand for tertiary education. This increase in demand is attributed to several interventions to boost enrolment at the pre-tertiary level. Several tertiary education institutions have effectively harnessed Information Communication Technology (ICT) applications and infrastructure, and part-time and sandwich programmes to improve access.

Technology has been instrumental in opening up avenues for providing and accessing tertiary education. Massive Open Online Courses (MOOCS) is a clear example of innovation used to improve access. In Sub-Saharan Africa, distance education and franchised campuses are the avenues used to improve accessibility (Tackie Larkai, 2014). While public universities favour distance, modular and sandwich options, most private institutions employ weekend, evening and part-time options in the quest to improve accessibility and ensure equity. Unlike the developed countries with strong international collaborations in technology and its infrastructure, countries in
Sub-Saharan Africa rely mostly on print media, simulated lecture video recording and actual tutored lectures at designated learning centers nationwide (Mnyanyi & Mbwette, 2009; Tackie Larkai, 2014).

2. Research Objectives
The paper seeks to discuss the trends in distance education over the last seven years. Additionally, enrolment and patterns would be highlighted. These trends would be compared to the NCTE norms for higher education in Ghana.

3. Literature Review
According to Mnyanyi & Mbwette (2009, 2) distance education (DE) “is a learning process in which the teacher and the learner are separated in terms of space and time; communication between the two is mediated by print media or ICT; and learning is under the control of the learner rather than the teacher.” This definition endorsed by Sherry (1996) when she states that distance learning or education occurs when there is a separation of teacher and learner in space and/or time, volitional control of learning is by the student instead of the instructor and the communication between the two is noncontagious and mediated by print or some form of technology. This description by Sherry recognizes the use of both paper-and-pencil and ICT equally. But this situation may not be the case as developing countries are consistently faced with obsolete technology, inadequate infrastructure and energy problems (UNESCO, 2002; Nyerere, Gravenir & Mse, 2012). This is the main challenge being faced by Tanzanian distance education sector (Mnyanyi & Mbwette, 2009).

Similarly, Caruth and Caruth (2013) defined distance education as “instruction in which students are separated from instructors during the entire course of study.” Based on their categorisation, Ghana’s DE can be defined as a hybrid of correspondence and traditional education where correspondence is where learning and instruction conducted through the mail via the print media and traditional which is the conventional method is the face-to-face interaction between the teacher and the student.

Tanzania started Open and Distance Learning (ODL) in 1994 with 766 students after ODL was approved by parliament in 1992 with 40,146 as at 2008 (Open University of Tanzania, 2009, cited in Mnyanyi & Mbwette, 2009). With the main aim of improving access to higher education, the Open University of Tanzania (OUT) runs a print-based media supported by face-to-face sessions. With their main challenges being the rate of technology change, creating a situation where there is never a suitable technology at any point in time as new technologies become obsolete before universities have to put it in use fully.

3.1 Distance Education in Ghana
The tertiary sector of Ghana’s education system is broadly categorised into public and private tertiary institutions. Both categories admit students into the distance learning programmes albeit in different models. The public universities use the dual model and are heavily dependent on the print media while the private institutions are mostly dependent on the ICT.

The mission of Ghana’s distance education programme is to make quality education at all levels more accessible and relevant to meet the learning needs of Ghanaians so as to enhance their performance and improve the quality of their lives (Government of Ghana, 2002). It also seeks to provide an alternative approach to the traditional models and ensure judicious use of physical and human resources (Government of Ghana, 2002).
In the Ghanaian model, students attend series of lectures at designated distance learning centers nationwide and then move onto centralised university campuses to attend revision lectures and write examinations while the regular students are on vacation. Another model employed is the franchised campus model where each region has a designated center where students write their examination and attend their lectures.

The first model does not only give such students the feel of campus life but also gives them access to the same facilities as regular students although over a limited period. This approach is cost-beneficial to employers. Where employers would have had to grant paid or unpaid study leave, it can now enjoy the services of its staff while they acquire necessary training and skills for improved service delivery. Distance learning ensures that teaching and learning at the tertiary education level is in a continuous loop all year.

To improve access to tertiary education through distance learning, Modular Teacher Training Programme was introduced in 1982 mainly to upgrade untrained teacher academically and professionally. This faded out but by the 1991 Education Reforms Recommendations paved way for the new face of distance education in Ghana. In 1996, the University of Education Winneba admitted its first batch of distance education students. The University of Ghana and Cape Coast started diploma programs by distance in 2001/2002 academic year in youth development work and basic education respectively (Hope & Guiton, 2005).

At the end of the 2013 accrediting year, tertiary education sector had about 170 private and public institutions. Nine out of these institutions were offering distance programmes, four were public while five were private. As at March 2016 the number of tertiary institutions offering distance education was eight. This includes four public and four private institutions. While the public participation remained the same, private institutions reduced from five to four (NAB, 2016; 2013). The reduction according to NAB is because the accreditation status of some of the distance learning institutions has expired.

4. Approach
The research used firsthand data collated by the National Council for Tertiary Education (NCTE), Ghana. The data collected and analysed on institutions over a period of seven academic years (2008/09 – 2014/15) for four of the institutions – University of Cape Coast (UCC), Kwame Nkrumah University for Science and Technology (KNUST), University of Ghana (UG), and the University of Education, Winneba (UEW). The data was disaggregated and reassembled into Microsoft Excel to generate graphs, pie charts, tables, figures and others. Data of distance learning institutions collated by NCTE 2011/12 to 2014/015 is also analysed and compared to the enrolment patterns of the public institutions. To understand the trend better the average enrolment of the review period was calculated and used a simulation enrolment figure for UCC (2011/12).

Additionally, a linear regression was also done using STATA to explain the trends witnessed in the last seven years. This was used to explain the annual rate of increase of distance education enrolment over the last seven years for both public and private institutions and for the total enrolment. The dependent variables total distance enrolment (TTENRL), total public institution enrolment (PUBTL), private distance institutions (PRVTL) and the individual universities. The independent variable was the academic years, 2008/9 – 2014/15 (YEAR).

Other sources of information including published and unpublished reports, and documents were reviewed. Informal interviews, employing unstructured interview guides were also carried out with
key persons at the NCTE Secretariat (Planning, Research and Development Officers) and National Accreditation Board (NAB).

5. Trends and Patterns in Distance Education in Ghana
The tertiary education sector in Ghana has enrolled 374,017 students in both private and public institutions between 2008 and 2015. A total of 362,402 students were enrolled in the public universities. Private distance education enrolment over the review period was less than 1% (11,615) of the total enrolment of distance students.

5.1 Trends in Enrolment
Annual rate of increment in distance education was 7984 during the last seven years ($p=.002$). The private distance enrolment had 777 annual rate of increase ($p=.001$). The total public enrolment increased by 7206 annually ($p=.003$). UCC had an annual increment of 4073 ($p=.001$) while KNUST had an annual rate of increase of 1484 ($p=.003$). UG (659, $p=.121$) and UEW (989, $p=.533$) did not have statistically significant level of increase. An analysis of regular enrolment showed 2073 annual rate of increase for student enrolment. This rate of increase in the public universities is however not significant ($p=.341$) (See Appendix 1).

These results show that the public universities account for majority of the annual growth in distance enrolment while the UCC is the highest contributor to the rate of increase. The UCC is therefore a major determinate of the enrolment rates and growth in Ghana’s distance education sector. KNUST and private distance institutions are the second and the third major contributors in the growth of distance education. Based on the results, UEW and UG although enroll students their contribution are not significant in the development trends for the distance education sector in Ghana. Comparatively, the public distance sector is impacting the tertiary sector in growth and improved accessibility than regular enrolment based on the regression analysis. This clearly shows the great importance of distance education in the development of the tertiary education sector as a whole.

5.2 Enrolment Patterns
Enrolment in the Distance education has seen consistent increment over the review period for both private and public institutions as showed in Figure 1. Within the seven years, the 2013/14 and 2014/15 recorded the highest enrolment with almost 70,000 students at both the graduate and undergraduate levels for the public institutions. While the private institutions highest enrolment was in the 2014/15 with 4,201 students.
Figure 2 presents the distribution of the distance students enrolled in institutions offering distance programmes. UCC has enrolled 47% (176,064) of all distance students over the last seven years. UCC had the highest number of enrolled students in 2008/09, 2011/12, 2012/13, 2013/14 and 2014/15 academic years while UEW recorded the highest enrolment in 2009/10 and 2010/11. UEW had the second highest distance students with 27.8% (104,107) of all students enrolled in the last seven years. UEW and UCC together were responsible almost 75% of total enrolment in the last seven years. The rest of the enrolment was distributed as follows: 12% for UG; 10% for KNUST and 3% for private distance learning institutions.

Figure 3 shows the trend in enrolment by all institutions offering distance programmes. UEW consistently had an increase in enrolment except in 2011/12 academic year where a decline in
enrolment was witnessed. The UCC consistently improved enrolment during the review period. KNUST on the contrary increased enrolment for five years, peaking in 2013/14 and declining in 2014/15. UG also experienced consistent increase in enrolment for four years and peaked in 2012/13 and has since been on the decline although a marginal increase was experienced in 2013/14 but declined again in 2014/15. Private distance learning institutions however had consistent increase in enrolment.

Comparatively, Figure 2 and 3, show that UEW and UCC together account for over 75% of all distance enrolment in Ghana. In 2014 the total enrolment of UEW and UCC was 75% – 37.43% and 38.22% respectively was reported in a five year trend analysis (Tackie Larkai, 2014). The trend has changed in relation to contribution made by the institutions. The two institutions together still account for 75% of enrolment but UCC is responsible for 47%. This may be explained by improved enrolment by the two other public institutions and inclusion of private institutions in the analysis.

**Fig.3: Distance Enrolment Trends by Institution**

Source: NCTE, 2008-2015

KNUST and UCC were the only public universities enrolling distance students at the graduate level as at 2012/13 (Tackie Larkai, 2014). This has improved as UG and UEW have both began graduate programmes in 2013/14 and 2014/15 respectively. From Figure 4, KNUST enrolled 85% (16,028) of all graduate students. Private distance institutions enrolled the second highest with 9% of graduate enrolment. UG commenced graduate programmes by distance in 2014/15 with 40 students. UEW recorded its first enrolment in 2013/14 with 197 students which reduced to 115 in 2014/15. Hence, UEW in the last seven years enrolled 2% (312) of total graduate students. UCC recorded less than 80 graduate students annually for six out of the seven years under review. In 2014/15 graduate enrolment was 539 making the total enrolment over the seven year period 720. This represents 4% of total distance graduate enrolment in the last seven years.
Although a total of 18,892 students have been enrolled at the graduate level, this is only 5% of the total enrolment of distance students. The rest of the students are enrolled into various undergraduate programmes – certificate, diploma and degree. Figure 5 shows the distribution of students according to the level they are enrolled. The proportions are overwhelmingly in favour of undergraduate programmes. This is may be attributed to University of Ghana and University of Education, Winneba’s lack of graduate programmes until 2014/15 and 2013/14 respectively.

Fig. 5: Distance Education Graduate/Undergraduate Enrolment

Source: NCTE, 2008-2015
5.3 Impact, Challenges and Way Forward for Distance Education in Ghana

5.3.1 Access and Impact
Rates of enrolment in distance education in the USA according to Caruth & Caruth (2013) exceed the overall growth rate in higher education. This supports the trends in Ghana where the annual rate of enrolment increment for public universities was more than double that of regular enrolments. This confirms that distance education is improving its access to higher education. Hence, Ghana is achieving its aim of introducing distance education, where the reform to education proposed in 2002 sought to

“… improve access tertiary education by enabling people who qualify, but are unable to gain further their education at their own pace. … Distance education will help to increase access and progressively decrease the number of people seeking full time entry into institutions of higher learning” (Government of Ghana, 2002, 133).

Growth rate for distance education has seen consistent rise over the last seven years. With public universities having the highest impact in enrolment in the study, however only 5% of the students were undertaking graduate studies. Per the NCTE Norm graduate enrolment should be 25% of total enrolment of a university. These patterns fall far below the stated norms. Hence, although great strides to accessibility have been made, focus has only been on the undergraduate level to the detriment of the graduate and postgraduate levels. The future of distance is bright, but focus on graduate is need also essential for all-round impact and success.

5.3.2 Technology, Marketization and Competiveness
Distance education is Ghana currently caterers mostly for undergraduate education, with only 5% enrolment over the last seven years allocated to graduate programmes. The inherent challenge that this structure of distance creates is that there aren’t complementary graduate programmes for the undergraduate output of the system. This will in turn limit accessibility to the graduate levels thereby negating the gains witness at the undergraduate levels. To ensure competition and marketization of the undergraduate programmes, it is recommended that its complementary graduate and post graduate programmes be created to ensure equal access at all levels.

Technology is causing a revolution in the distance sector, whereas the public are still traditional in their deliveries, technology plays a huge part in the private distance institutions. The private institutions which are mostly franchised campuses of foreign universities focus largely on the graduate programmes hence graduate enrolment caters for 82% of its total enrolment. This is the reverse for the public institutions. With its current annual increment of almost 800 and the help of technology, the private sector will be a force to recon with in the graduate enrolment of distance education in future. The public therefore have to take the challenge and introduce technology enhance programmes to supplement their current traditional and franchise campus system. This approach will strengthen their role in the distance education landscape. Technology will take the public institutions global just as foreign institutions also have franchised campuses here in Ghana. It is imperative that new strategies like technology are employed to attract new students.

5.3.3 Policy on Distance Education
The analysis show that distance education is growing and expanding. The wave of technology will leave this sector of education untouched. The question therefore arising is the framework within which distance education would operate in Ghana. Currently, total enrolment of distance is half
that of regular student enrolment in public universities. With almost 8000/year increase in enrolment annually, Ghana is not far from the experience of the USA. Hence regulation for this sector is imperative. Currently there are no National Standards and Norms or Policy for distance education in Ghana and this lack of policing of the sector will be a threat to the sector in future thereby creating more challenges than positives. This highlighted by Nyerere, et. al (2012, 187) when they stated that:

“The absence of clearly defined national distance education policies in most African countries poses another challenge. Policies are needed to provide a framework for the development of distance education. With the exception of South Africa, few African countries have clearly defined national policies to guide the development of distance education in their respective countries. The absence of such policies is a clear obstacle to the development of distance education.

5.3.4 Participation and Penetration level
The distance education is growing at a phenomenal level of almost 8000 students per year and this growth is the contribution of just nine tertiary institutions out of 170 public and private institutions in Ghana. At the end of 2013 the participation rate was 5.3% – 2.4% and 2.9% for public and private distance institutions respectively (Tackie Larkai, 2014). The current rate of participation is 4.9% – 2.44% each for public and private institutions. Other institutions both public and private especially the polytechnics have to embrace the wave and introduce distance programmes. This would not only improve access to arts and humanities but also to other technical areas and sciences which will boost the developmental process of Ghana. What planners and regulators should think of is, if half of the about 170 tertiary institutions in Ghana provide distance education options what will be the growth level? This sector needs more participating institutions, especially for the provision of graduate and post graduate education.

6. Conclusion and Recommendations
A transition of teaching is underway and this revolution is as a result of technology and made possible by modern facets of life. Education just like commerce is not going to be untouched by technology. Universities would be able to offer online programmes on a global basis (Dykman & Davis, 2008). The kind of DE in Ghana now is considered traditional as it is still place-bound and product-oriented and determines the time, place and pace for learning. It is time for Ghana in the face of 4G LTE and its associated upgrades to invest in technology based distance programmes. Ghana public universities are behind in the race for online distance education. This raises questions of accreditation, policy and regulation. Is Ghana ready for the online wave? If so, then first the curriculum should be such that new students can be attracted both locally and internationally otherwise student enrolment will continue to fall as the population has already been educated.

This sector of tertiary education is important in improving the human resource capacity of a nation. A continuous effort from all stakeholders is needed to improve the sector and enhance the delivery modes of distance education while ensuring quality. Additionally, institutions should be encouraged to develop more graduate programmes for distance education as the current enrolment patterns are in adequate. Distance education is especially important with the introduction of the United Nations Sustainable Development Goals in 2015 with the fourth goal seeking to extend access and equity to higher education by 2030.
National norms and standards are needed to plan and regulate this sector of education and not left to the discretion of institutions. In addition, a broad policy framework for distance education is needed to guide the development of this sector and the institutions encouraged to over more programmes in distance education with more attention on science/applied science and graduate education. An investment plan is also necessary financial support for institutions offering distance education option

7. References
Caruth, D. L., & Caruth, G. D. (2013). Distance Education in the United States: From Correspondence Courses to the Internet, Turkish Online Journal of Distance Education, 14 (2), 141-149
## Appendix 1

### Regression Output

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| Equation | Obs | Parms | RMSE | "R-sq" | F    | P    | Coef. Std. Err. | t  | Pr(|t|) | (95% Conf. Interval) |
|----------|-----|-------|------|--------|------|------|-----------------|---|-------|---------------------|
| PRVTL    | 7   | 2     | 522.6269 | 0.9254 | 62.01468 | 0.0005 |                     |   |       |                     |
| US       | 7   | 2     | 1866.151 | 0.4112 | 3.492442 | 0.1206 |                     |   |       |                     |
| KNUST    | 7   | 2     | 1514.019 | 0.8434 | 26.92659 | 0.0035 |                     |   |       |                     |
| UCC      | 7   | 2     | 2784.742 | 0.9230 | 59.89863 | 0.0006 |                     |   |       |                     |
| UEM      | 7   | 2     | 7835.163 | 0.0820 | 0.468321 | 0.5335 |                     |   |       |                     |
| RGLR     | 7   | 2     | 10404.88 | 0.1809 | 1.104313 | 0.3414 |                     |   |       |                     |
| TITENRL  | 7   | 2     | 6733.501 | 0.8873 | 39.36916 | 0.0015 |                     |   |       |                     |
| PUNTL    | 7   | 2     | 7148.074 | 0.8506 | 28.46016 | 0.0031 |                     |   |       |                     |

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