Nature of Teaching: What Teachers Need to Know and Do

Bethel T. Ababio

Department of Arts and Social Sciences Education University of Cape Coast, Ghana Email: <u>ababs58@yahoo.com</u>

Abstract

Improving the quality of what happens in schools and preparing pupils/students for life in the 21st Century requires the highest quality of teaching. This article therefore focuses on professional classroom competences that every professional teacher should possess. It explores various scholarly definitions of teaching and time-tested principles of teaching and the classroom strategies available to teachers which when used judiciously will best assist pupil/student learning. The article will be useful for practicing teachers, student teachers, college and university lecturers, school-based in-service coordinators, advisory teachers and school mentors and head teachers. Though the prime aim of this article is to provoke discussion on the nature of teaching, its additional aim is to help the afore-mentioned stakeholders in the teaching enterprise reflect on their current practice and encourage them to ask questions about everyday classroom events.

Keywords: Concept of teaching, classroom competences, principles of teaching, pupil learning, phases in teaching

1. Introduction

Whether teachers like it or not, every time they step into a classroom to teach students, they are putting themselves on the "firing line" and students will either shoot them down or acclaim them. Students assess their teachers informally, and the amount of confidence they have in them depends to a large extent on the perceived level of their competence. Teaching a subject presupposes that the teacher is proficient in the area and that there is no excuse whatsoever for the teacher to give students anything but the best. Not only do students expect that from the teacher but in a way demand it. So the question every teacher should ask him/herself before stepping into a classroom is "what are the expectations of students and how should they be met?" This article would try to answer this question by addressing issues such as the concept of teaching, principles of teaching, phases of teaching, requirements for teaching and ends with a far reaching conclusion.

2. The Concept of Teaching

Various definitions have been given to teaching. According to Nilsen and Albertalli (2002), teaching in its broadest sense is the process whereby a teacher guides a learner or a group of learners to a higher level of knowledge or skills. Desforges (1995) defines

teaching as the management of pupils' experience, largely in classrooms with the deliberate intention of promoting their learning.

The following scholars have also defined teaching in various ways.

Schlechty (2004) defines teaching as an art of inducing students to behave in ways that are assumed to lead to learning, including an attempt to induce students to so behave. What Schlechty meant by teaching being 'an art' is that the teacher must create situations to facilitate learning and then motivate learners to have interest in what is being transmitted to them.

Melby (1994) also states that teaching is not merely dispensing subject or lesson-having, but an art which involves the student in the teaching-learning process where the student is given the chance to participate fully in the process – that the teacher accepts each pupil and has a favourable attitude towards individual differences. It is a relationship in which the teacher eschews sarcastic statements, ridicule and fault-finding. Thring, (2001) says pouring out knowledge is not teaching. Hearing lessons is not teaching teaching is getting at the heart and mind so that the learner values learning and to believe that learning is possible in his/her own case.

Smith (2004) sees teaching as the process of carrying out activities that experience has shown to be effective in getting students to learn. He goes on to say that teaching is that which results in learning – learning is the responsibility of the teacher and that if students do not learn, it is the fault of the teacher. He capped his statements on teaching by stating that teaching is undertaking certain ethical tasks or activities, the intention of which is to induce learning. Farrant (1980) simply defined teaching as a process that facilitates learning.

Frimpong (1990) defined teaching as the process whereby a teacher imparts knowledge, skills, attitudes and values to a learner or group of learners in a way that respects the intellectual integrity and capacity of the learners with the aim of changing the behaviour of the learner(s)'. From this definition, one can say that teaching involves not only how information gets from the teacher to the learner but also how the learner (i) uses it, (ii) interacts with it, (iii) receives guidance (iv) receives feedback.

Confucius cited in Knott and Mutunga said "in his teaching, the wise man guides his students but does not pull them along; he urges them to go forward and does not suppress them; he opens the way but does not take them to the placeIf his students are encouraged to think for themselves, we may call the man a good teacher" (1993:158).

From the above definitions on teaching, one can surmise that there are two main types of institutionalized teaching – these are (a) *formal teaching* in which the teacher directs the teaching learning process with minimal student participation and (b) *informal teaching* in which the teacher serves as a guide, facilitator, counselor or motivator and student participation is very high.

From the foregoing discussions, we can infer that teaching and learning are intricately linked together like Siamese twins. That the major goal of teaching is for the teacher to ensure that students/pupils learn what has been taught. It therefore behoves the teacher to teach in such a way as to promote learning. Against this

backdrop, teachers should note that the purpose of teaching is not the time for them to air their knowledge but to help children to learn (Colin, 1969).

3. Principles of Teaching

A principle of teaching is a basic idea or rule that explains how teaching is done or conducted. In this section, the following teaching principles given by Tamakloe (2005) are presented. These include the teacher must

- time the various stages of a lesson so that each stage receives the desired attention without exceeding the time limit of the lesson.
- detect when his/her pupils/students are getting bored or restless so that s/he can vary his/her approach or the stimulus.
- use the experiences of his/her pupils/students to initiate as well as generate further learning.
- make judicious use of available resources in the teaching-learning process.
- present what s/he teaches in an interesting way.
- write orderly layout of summaries on the chalk/whiteboard.
- express him/herself and illustrate his/her points clearly in the lesson particularly in his/her explanation of content.
- design suitable and adequate quantity of exercises and assignments for his/her pupils, and insist on prompt tackling and submission.
- use good or correct language in the teaching process.
- correct and direct his/her pupils/students without making them feel embarrassed or frustrated.
- learning situations that will serve as challenges to his/her pupils/students.
- select appropriate learning experiences of his/her pupils/students.
- employ a variety of teaching methods and techniques within a lesson.
- generate divergent thinking and creativity in his/her pupils/students
- be able to achieve the objectives of his/her lessons.
- use praise to urge his/her pupils to become eager to participate more in a lesson.
- study and become aware of the need of the individual pupils/students in his/her class.
- be able to assist his pupils/students to able to assess their own performances.
- maintain a reasonable balance between pupil-activity and teacher-activity as dictated by the nature of the lesson.

4. Main Phases in Teaching

Although what the teacher has to teach is contained in the teaching syllabus, he/she is constantly making decisions with regard to students' learning and appropriate teaching strategies and methods to employ. Among the decisions that a teacher has to take on a daily basis are how to plan for his/her lessons which cover issues such as *what to teach, how to teach what has been selected* and *how to evaluate what has been taught*. These questions are concerned with three basic teaching functions: (i) Planning (Pre-Teaching Phase); (ii) Implementation (Teaching Phase) and (iii) Evaluation (Post-Teaching Phase).

4.1. Planning Phase (Pre-teaching Phase):

The decision on how to plan the lesson should be taken long time in advance of the

lesson. This is firstly, to allow the teacher enough time to read around the topic to be taught, especially where the teacher's command over the subject/topic is weak, Secondly, to permit the collection of teaching-learning resources and the preparation of other teaching learning resources which could not be acquired commercially (Colin, 1969).

This phase requires the teacher to make decisions about the students' needs, the most appropriate goals and objectives to help meet these needs, the motivation necessary to attain their goals and objectives and the most appropriate strategies for the attainment of those goals and objectives. The planning decisions cover the pupils' progress; the availability of resources; equipment and materials; the time requirements of particular activities {Perrott et al. (1977) cited in Perrott, 1982}. It is during this phase that the teacher writes up his/her lesson plan.

4.2. Implementation Phase (Teaching Phase):

This phase requires the teacher to implement the decisions made at the planning stage, especially those related to teaching methods, strategies and learning activities. The implementation function occurs when the teacher is interacting with the students. In this phase, the teacher is expected `to exhibit teaching skills such as presenting, explaining, listening, introducing, demonstrating, eliciting responses and achieving closure. The implementation phase has segments such as *prime, presentation, summary, consolidation and check learning through class exercise*.

4.2.1. Prime Stage. It is getting students into a state of readiness to learn. This may involve a review of relevant previous learning and giving brief outline of the topic and its structure and generating student interest by indicating the importance of the topic as well as how it will be utilized. At the end of this stage, students should be aware of what is expected of them, should want to learn and should know how the subject/topic will be dealt with (Knott & Mutunga, 1993).

- **4.2.2**. **Presentation Stage.** This usually takes a greater part of the implementation phase. The main body of the lesson is delivered in a systematic and logical manner. If the teacher decides to use explanation, it should be aided by visual aids.
- **4.2.3 Summary.** At the end of the presentation stage, the topic should be

summarized and the main elements reviewed.

4.2.4. Consolidation/Recapitulation/Closure. This stage is used to make students think hard about the topic and as a result learn. The consolidation stage forces students to recall the information and think it through with guidance from the teacher. The teacher can do this through the following steps:

- First pose some simple recall type questions on key elements of the topic:
- Then pose open-ended questions of a problem-solving type;
- Pause to give students a chance to think;
- Nominate at random a student to supply the answer;
- Echo the response by using the students' own words or paraphrasing them.

When the nominated student gives an incorrect answer, the teacher should refer it to another student or give clues to correct the original response. This procedure should be repeated until all the main elements and key aspects of the topic have emerged and the teacher should ensure this by distribution of questions that as many students as possible make a contribution. Another dimension to the consolidation stage, if time permits, is to give students the opportunity to ask questions requiring clarification or elaboration (Knott & Mutunga, 1993).

4.2.5. Check Learning through Class Exercise. The last stage of the implementation phase is to ensure that students have fully understood the lesson through a written test or assignment. This is done by asking several questions requiring short, or one word answers on the main points covered. These may be asked orally or shown on an Overhead Projector (OHP) or written on the chalk or white board, but should always require written answers. These should be marked there and then by each student, either personally or through exchanging answer sheets with a neighbour, whilst the teacher calls out answers and asks for results. This

can be done formally or informally but both students and the teacher will have some idea of whether the instruction was assimilated because all students were tested (Knott & Mutunga, 1993). In a one hour lesson, Knott and Mutunga opine that the teacher can allot the following duration or percentage to the five stages of the implementation phase:

- *Prime Stage* 5 minutes or 7.5%
- *Presentation Stage* 21 minutes or 35%
- Summary 6 minutes or 10%
- Consolidation/Recapitulation/Closure 22 minutes or 37.5%
- *Check Learning through Class Exercises/assignments* 6 minutes or 10%.

5. Evaluation Phase (Post-Teaching Phase)

The evaluation function requires decisions about the suitability of objectives of the lesson and the teaching strategies linked to them, and eventually whether or not the students are achieving what the teacher intended. Teaching skills which support this function include specifying the learning objectives to be evaluated; describing the information needed to make such an evaluation; obtaining, recording, analyzing and recording that information and forming judgments. In other words, you examine carefully the results of your teaching and decide how well you handled each teaching function. On the basis of this feedback you decide on whether or not to make new plans or try different implementation strategies. In this way, your decision-making will become more accurate (Perrott, 1982).

6. Requirements for Teaching

Whilst all managers have something in common, specific management requires specific knowledge. Teachers as managers need a special body of knowledge and special skills too. The nature of the various subject areas as formal academic disciplines, the objectives for teaching them, the competencies they demand for their teaching and learning and the varied methods and materials required for teaching and learning them, makes it imperative for every teacher to possess a repertoire of knowledge, qualities, attitudes and values.

There are certain characteristics given by Shulman (1987) that every professionally-trained teacher should possess. These include *content knowledge*, general pedagogical knowledge, curriculum knowledge, knowledge of learners and their characteristics, knowledge of educational context/human relations, pedagogical content knowledge/teacher craft knowledge and knowledge of educational ends.

6.1. Content Knowledge

Content knowledge can be described as the subject matter, ideas, skills or substance of what is taught. It covers issues such as

- The teacher being familiar with the most recent knowledge in his/her discipline, history and philosophy of teaching the subject (various schools of thought), how the knowledge base of the subject informs or is informed by other disciplines.
- The teacher must have knowledge and understanding of the different fields/aspects in his/her subject That is, s/he must have a broad view of the subject in all its aspects, a firm understanding of its

concepts, principles, values, theories, generalizations, etc. and have an unending enthusiasm for its study.

• His/her content knowledge should be in-depth and must know the probable sources of knowledge in his/her subject – textbooks, journals, national dailies, unpublished materials, etc. from where s/he should tap his/her content.

Colin (1969) states that it is necessary for the teacher to read and study far beyond the level required for his/her actual lessons. For this reason, newly trained teachers must continue to study even though they have gained their teaching qualifications. The teacher should have both practical and liberal knowledge of his subject, with the latter making it possible for students to have an intelligent grasp of the salient features of world affairs. Lastly, the reason why the teacher should read broadly is that the world has now become a global village due to the modern means of technology, transport and communication. This has brought world events within the scope and experience of more people each year. Students who have access to these modern means of communication are likely to ask in class questions on issues they don't understand. The well-informed teacher should be in a position to deal with such questions expertly.

In sum, there is no substitute for a sound knowledge of the subject matter and no teacher can be excused for trying to hide a deficiency of knowledge behind a façade of teaching techniques, for if your knowledge is suspect, your teaching techniques will invariably be suspect.

6.2. General Pedagogical Knowledge

It is made up of the broad principles, approaches /strategies, methods and techniques for conveying content to learners. It covers issues such as the teacher should

- Not be content with one good teaching method, but should constantly seek new ways of approach that are likely to interest students and at the same time be more effective in imparting knowledge.
- Never consider having reached the ultimate in teaching. Teachers should always keep their minds and attitudes flexible enough to consider new methods and if these methods are good, attempts should be made to incorporate them in their schemes of work. This is because students not only accept but welcome new methods of approach which bring about receptive learning.
- Train students to observe things, record and correlate both primary and secondary data (e.g. study of maps, pictures and books).
- Teach students to learn to do things for themselves so as to be better equipped to carry across into everyday life the implications of what they learn at school. For example, a teacher teaching a topic like "the tropical grassland" in a savannah environment in a geography or social studies lesson should become the supplier of raw materials from which the students extract and interpret relevant details.
- Try as much as possible to break away from the **teaching-talking** and **talking-teaching idea** which lies behind much of the thinking of some teachers today.

6.3. Curriculum Knowledge

It is the information on various materials and programmes in the teacher's subject area which serve as "tools of the trade" for the teacher.

- This information includes the various levels at which his/her subject operates. It covers the

 (a) *largest level* which in the case of a subject like geography may be referred to as the *social* sciences (*i.e. broad field curricular*). Other types of curricular which belong to this level include, *core curricular, completely undifferentiated curricular* and *subject specific curricular;* (*b*) *intermediate level* includes courses organized as segments, e.g.
 ECONOMICS 1, ECONOMICS 2, AUDITING 1, AUDITING 2, etc.; single semester or year courses, e.g. ESS 232, ESS/EAS 305, EPS 403, etc.; (c) *lowest level* includes issues such as the various units, topics, lessons taught in a subject area.
- In addition to the above, the teacher should know the recommended textbooks, teachers' manuals, head teachers' handbooks, etc.
- He/she should know the materials required for teaching particular lessons; know the relevance of teaching certain topics.
- The teacher should know the *i. organizing elements* these are the knowledge (facts, concepts and principles), skills (cognitive, affective & expressive), values (socio-cultural, intellectual, moral, etc), attitude etc. which make up the content and the learning experiences to be taught. These serve as threads in the organization of an instructional programme or course/subject; *ii. organizing principles* - these are the standards by which the organizing elements are woven together to bring about effective teaching and learning. Examples include maxims of logical teaching methods such as teaching from the known to the unknown, from simple to complex, chronological arrangement of facts, demanding prerequisite learning, increasing breadth of application, increasing range of activities, use of description followed by analysis, forming a general conclusion from specific cases or examples, using specific examples or cases to form a generalization, stating objectives of study, repetition, application of facts, etc.; iii. organizing centres – these are the topics, problems, units of work or resource units which are used to combine the content and methods of teaching in the discipline with selected learning experiences in order to achieve the intended learning outcomes; iv. organizing structures - they are the structural elements around which the learning experiences are organized.

6.4. Knowledge of Learners and Their Characteristics

It is information on the physiological, social, demographic and mental/psychological make up of the learners which serve as one of the key determinants of successful teaching and learning. It demands that teachers should

- Possess more than adequate knowledge of their students, their characteristics (personality traits), learning styles and habits, level of conceptualization, levels of motivation (i.e. their reasons for pursuing the subject/course), degree of interaction amongst themselves in both learning and non-learning environments.
- Know the principles/theories of learning and human growth (e.g. Piaget, Thorndike, Skinner, Brunner, etc.) which correspond with learners' level of development or maturity or age –

pre-conceptual, enactive representation, iconic representation, symbolic representation and formal operations stages.

- Know their students' skills, abilities, attitudes, knowledge, interests, individual differences in learning, etc.
- Consider the various levels and types of motivation their students bring into the classroom is the programme relevant to their interests, career aspirations, etc?
- Demographic information on their students age range, sex ratio, number in class, etc.

6.5. Knowledge of Educational Context/Human Relations

It is information on issues such as the workings of such as the workings of a group of learners or the classroom, school organization/governance, peculiarities of local communities and cultures, etc. which impinge on the teaching-learning process. It demands that

- Teachers should know the culture and organization of their schools, the community and the cultural patterns of the society in which the school is located. All these influence to a great extent, the teacher's relations with his/her students, colleagues, school administrators and external school officials. As regards relationship with parents, the teacher can report to parents on their children's academic progress, hold parents' conferences and enlist the assistance of parents to help with some school project and encourage them to supervise their children's home work. When this is done on a regular basis, it strengthens the relationship between the teacher and parents and makes both teacher and parent partners in the grooming of the children (Callaghan, 1966).
- The teacher should be very effective in his/her working environment both in school and out of school. S/he should on first appointment acquaint him/herself with the various context in which s/he is required to work his/her students, fellow teachers, school authorities, non-teaching staff, parents, educational authorities, etc.
- The teacher should know the factors which bring about a productive environment for teaching and learning these factors include *discipline and order; conventions and routines in the school; his/her responsibilities as a teacher; intellectual, moral and spiritual values of the school; the schools' organogram (i.e. the organizational chart of the school showing the various administrative positions and their corresponding job descriptions, etc).*

6.6. Pedagogical Content Knowledge/Teacher Craft Knowledge

- It is the special mix of content and pedagogy which is unique to teaching. It is the teacher's special form of professional understanding and how he/she blends content and pedagogy to teach particular topics or problems consistent with students' interest and abilities. Teachers who possess teacher craft knowledge are those who
 - Foster the understanding of particular a concept, principle or theory by having knowledge of the ways of transforming the concept for students. They must have knowledge of the ways of transforming the content for the purposes of teaching.
 - In the words of Dewey (1956), must 'psychologize' the subject matter. In order to transform or 'psychologize' the subject matter, teachers must have a knowledge of the subject matter that includes a personal understanding of the content as well as knowledge of ways to

communicate that understanding to foster the development of subject matter knowledge in the minds of students.

- Are able to blend content and pedagogy into an understanding of how particular aspects of subject matter (e.g. concepts, principles, theories, etc) are organized, adapted and represented for instruction.
- Are able to transform subject matter into teaching using different ways to represent it and make it accessible to learners. S/he knows what teaching approaches fit the content, and likewise, knows how elements of the content can be arranged for better teaching.
- Have knowledge of what students bring to the learning situation, knowledge that might be either facilitative or dysfunctional for the particular learning task at hand. This knowledge of students includes their strategies, prior conceptions; misconceptions students are likely to have about a particular domain and potential misapplication of prior knowledge (Shulman, 1987).

6.7. Knowledge of Educational Ends

It provides information on cultural, philosophical and ideological issues which determine the general direction of the education system and the type of curricular that a nation should have. It makes the following demands on the professional teacher:

- This trait presupposes that if an educational programme is to be planned and if efforts for continued improvement are to be made, it is very necessary for the teacher to have some conception of the educational goals being aimed at. These goals or ends become the criteria by which materials/resources are selected, content outlined, instructional procedures are developed and tests and exams are prepared. These goals are not simply matters of personal preference of individual teachers or groups, but are ends that are desired by the school staff.
- The teacher must have knowledge of the philosophy of education in order to come out with realistic educational objectives/goals. In Ghana, the educational goals among others include i. *education should result in a well-balanced people with the requisite knowledge, skills, values, aptitudes and attitudes for self-actualisation and for the socio-economic and political transformation of the nation; ii. Ghanaians should be trained to become enterprising and adaptable to the demands of a fast-changing world driven by modern science and technology to build a knowledge-based economy; iii. Education should lead to improvement in the quality of life of all Ghanaians by empowering the people themselves to overcome poverty and also raise their living standards to the levels that they can observe through the global interchange of images, information and ideas, etc. (Ministry of Education, Youth & Sports ,2004).*
- The teacher should have knowledge of the various schools of thought with regard to educational goals such as *the progressives, the essentialists, the subject specialists, child psychologists, etc.* The progressive emphasizes the importance of studying the child to find out what purposes he/she has in mind information on this is the basis for selecting educational goals. The essentialist on the other hand is impressed by the large body of knowledge collected over many thousands of years and emphasizes this as the primary source for deriving educational objectives. The essentialist views objectives as essentially the basic learning selected from the vast cultural heritage of the past.

Conclusion

This article has discussed at length the nature of teaching from different perspectives. The issues discussed may not be exhaustive but the article describes to a large extent what every professional teacher should know and do in order to become a successful teacher. It is hoped that teachers can identify with these expectations. The article is not meant to be prescriptive but rather thought-provoking.

What the professional teacher should know is that teaching in the new paradigm of education is no longer the exclusive preserve of the teacher. Today, the task of the teacher is no more being an agent of knowledge – that is, teaching is no longer limited to imparting information in the hope that it will be comprehended by students. In the present dispensation, the teacher is not only a communicator but also a manager with the responsibility of creating the enabling environment for learning to occur. To do this, the teacher needs to have at his/her disposal a repertoire of teaching skills and employ interactive activities to bring about significant learning on the part of students. In conclusion, the extent to which the teacher is able to incorporate these interactive activities in his/her lesson is a function of his/her competence and personality (Ababio, 2009).

References

[1] B.T. Ababio, "Issues on the teaching and learning of geography at pre-tertiary levels", *Ghana Journal of Health, Physical Education, Recreation, Sports & Dance*,1(2), University of Cape Coast, Ghana, 2009, pp. 66–80.

[2] G.S. Callaghan, *Successful teaching in secondary school*, Scott Foreman and Company, Glenview, Illinois, 1966.

[3] H. Colin, Teaching geography in Ghana, Ghana Publishing House, Accra, 1969.

[4] C. Desforges, An introduction to teaching: Psychological perspectives, Wiley, John & Sons Incorporated, New Jersey, 1995.

[5] J. Dewey, The Child and the Curriculum, University of Chicago Press, Chicago & London, 1956.

[6] J.S. Farrant, Principles and practice of education. Longman Group Ltd., London, 1980.

[7] J.A. Frimpong, "Clinical supervision", The Teacher, GNAT, Accra, Jan – March. 1990, pp 10 - 16.

[8] C.S. Melby, Ghana primary school development, Ghana Publishing Corporation, Accra, 1994.

[9] Min. of Education, Youth & Sports, *White Paper on the Report of Education Reforms Review Committee*, The Author, Accra, 2004.

[10] M. Knott, & P. Mutunga, "Methods of teaching and learning". In B., Matiru, A Mwangi, & R. Schlette(Eds.), *Teach your best: A handbook for University lecturers*: University of Kassel Press, Kassel, Germany, 1993, pp. 157 – 219.

[11] A.B. Nilsen, & G. Albertalli, *Introduction to learning and teaching infants through elementary age children*, Delmar, New York, 2002.

[12] E. Perrot, *Effective teaching: A practical guide to improve your teaching*, Longman. London, 1982.

[13] A. Schlecty, *The art of teaching*. Prentice Hall Inc., New York, 2004.

[14] L. S. Shulman, "Knowledge and teaching: Foundations of the new reform." *Harvard Educational Review*, Harvard University Press, USA, Feb. 1987, pp. 1-22.

[15] M.K. Smith, Educational development in Ghana, Unimax Publishers, Accra, 2004.

[16 E.K. Tamakloe, *Preparing for teaching practice and the process of teaching* (3^{rd} Ed.). Cape Coast, Winx Computers, 2005.

[17] A.S. Thring, *Education, manpower and economic growth*, McGraw Hill, New York, 2001.

Profile of the Author

Bethel T. ABABIO: He is a Senior Lecturer in Geography Education at the Department of Arts & Social Science Education, University of Cape Coast in Ghana. He has been with this department for the past twelve years, first as an Assistant Lecturer, then a Lecturer and finally, a Senior Lecturer. He is an active member of the Ghana Geographical Association (GGA), the Ghana Geography Teachers' Association (GGTA) and the University Teachers Association of Ghana (UTAG). He is currently pursuing a Ph.D. Programme in Development Studies with the title of his dissertation being "Assessing the Institutional Capacity of Geography Departments for Education Quality Improvement in three Ghanaian Public Universities".