

ASSESSMENT OF POST-GRADUATE CONSTRUCTION MANAGEMENT PROGRAMMES IN NIGERIAN UNIVERSITIES

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Abstract

Professionals in the built environment seek postgraduate education in construction management to enhance their knowledge, acquire new skills and develop better ways of solving the myriad of problems in the industry. This study evaluates the various institutions offering postgraduate programmes in construction management in terms of uniformity of standard, adequacy of resources, quality of their curricula and the relevance of the programme to the overall performance of the industry in meeting the basic objectives of the delivery process, and the expectations of the employers of labour. The study recommends that universities should capitalize on their alumni base since they can provide link to the business community and donate funds to improve infrastructure. Also, the universities should reach out to the private sector and other institutions both within and outside the country. Universities should re-evaluate their curricula and modify where necessary so that they can equip construction management graduates to meet the challenges ahead.

The construction industry is one which employs a lot of skilled and unskilled labour force. This involves a large population of Nigerians and it is one of the most important sectors of the economy. The level of activities in the industry is directly proportional to the level of economic growth.

According to Ogunlana (2002), the industry accounts for 6-10% of the Gross Domestic Product and about 10% of the work force of most countries. The industry is considered as the leading sector and a big player in economic growth (Idoro, 2004). The high level man power such as Engineers, Architects, Builders, Quantity Surveyor required in the industry are produced by the Universities within and outside the country. Global economy, competition, regulatory requirements all are exacting new ways of doing things. Information technology is creating challenges for the industry continuously, resulting in better system of operations and cost reduction. These had brought a need for highly educated and competent construction managers. Attributes like flexibility, high level of intelligence, competency, easy adaptation, ability to operate in an uncertain environment with rapid changes are all required in the construction industry of 21st century.

The construction industry is becoming increasingly global and the role of project management professional now includes many front end services, which increases the required skill set of new graduates (Choudhury, 2000; Kay, 2001). Alternative contractual delivery systems, collaborative partnerships, new management initiatives, and global product markets require professionals and students to have a broader awareness of construction methods and project management issues.

In the recent past, construction industry had realized its short comings and now emphasis is being put on having a professional approach towards the delivery of the end products and service. In Nigeria, the demand for education is so high because education is not only an investment in human capital, but also a pre-requisite as well as a barometer for economic development (Adeyemo, 2000). Higher education in Nigeria is provided by Universities, Polytechnics, Colleges of Education and professional institutions.

Universities are established by federal or state governments and of recent by private organizations. The universities are subject to the accreditation of the National Universities Commission for uniformity of academic standard and sets admissions capacity. They are in turn governed or administered through the Council and a senate.

Most management institutions in Nigeria that offer graduate management education are public universities. They attract a large number of students due to their past reputation. The first generation Universities where construction management is taught presently are: Ahmadu Bello University, Obafemi Awolowo University, and University of Lagos. The second generation university in this regard is: University of Jos; Federal University of Technology, Akure; Federal University of Technology Minna. The first generation universities are however older in history and curricula development. Most second generation Universities derived their curricula and personnel from the first generation Universities.

Federal and State governments in conjunction with the National Universities Commission allocate funds to public Universities, evaluate curricula and oversee the development of University education. The Education Tax Fund also provides substantial funding for the promotion of knowledge and teaching in the Nigerian Universities.

Over the years, the post-graduate construction management program has been upgraded and refined keeping in mind the demand of the construction industry. Of significance is the impact of these programmes of various universities in terms of availability of the right skill in the ever changing environment and professionalism in work places to deliver projects within the overall objective of time, cost and quality performance.

Technological developments have influenced the daily life to an unexpected rhythm and with significant changes in the areas of design and construction. The tools and ways that are used in communication and exchange of information have had an influential and crucial role, therefore preparing students for the challenges of managing the large construction projects and fulfilling the demand of the industry is an important responsibility and a difficult task.

The construction management graduates will operate in the global and competitive environment; hence, preparing graduates for international opportunities within the ever-changing contract delivery systems present a daunting challenge. There should be a deliberate effort to determine what the challenges of the future of construction education will be. Therefore, it makes it expedient to view the postgraduate construction management programmes in Nigeria within the global community as graduates will do business in a global economy.

Overview of Construction Management in Nigeria

Nigeria attained independence from Britain in 1960 and became a republic in 1963. From this time a succession of governments (military and democratic) has governed the country. Nigeria has about 250 ethnic groups with diverse languages. The largest ethnic groups are the Yoruba, Igbo and the Hausa-Fulani. Nigeria is very important in the West Africa Sub-region and it is the largest Africa country in terms of population, and the largest black nation.

Its economy is highly dependent on the oil sector, which accounts for about 46% of Gross Domestic Product (GDP), and 85% of the country's foreign exchange earnings. With reserves of human and natural resources, the Nigerian economy has the potential to become industrialised and able to sustain economic growth and development, and reduce poverty. However, poverty is widespread and Nigeria's basic social indicators place it among the 20 poorest countries in the world. Jose (Arrendondo,2003). Economic mismanagement, corruption, excessive dependence on oil has been the

main reasons for the poor economic performance and rising poverty levels. At present the population is about 139million going by the census figure of 2006. The figure is distributed into a 36 states structure and a Federal Capital Territory.

Research Methodology

The research follows an ex post facto which involves descriptive framework covering survey, analysis and interpretation. Primary data for the research was obtained by the researcher by analysing the universities where construction management is taught at the post –graduate levels in Nigeria. Also it involved the construction Companies in Lagos and Abuja representing southern and northern axis of the country where statistics have shown that quite a volume of construction activities are taking place in Nigeria. These were analysed through correlational and comparative methods.

Higher Education in Nigeria

Higher education in Nigeria is provided by Universities, Polytechnics, Colleges of Education and professional institutions. Universities are established by federal and state governments, corporate bodies, religious bodies and individuals. The National Universities Commission (NUC) is the accrediting body for the universities programs, while the National Board for Technical Education (NBTE) accredits programmes in Polytechnics and Colleges of Education. The NUC enforces uniform standards and sets admissions capacity of every university in Nigeria. The government through the NUC and ministries of education provides funds for the universities. The universities also sources funding through partnership with private establishments.

According to the National Policy on Education (FRN,2004), the goals of tertiary education include:

1. Contributing to National development through high level relevant manpower training.
2. Developing and inculcating proper values for the survival of the individual and society.
3. Developing intellectual capability of individuals to understand and appreciate their local and external environments.
4. Acquiring both physical and intellectual skills which will enable individuals to be self reliant and useful members of the society.
5. Promoting and encouraging scholarship and community service.

In order to achieve these goals all stakeholders of higher education, the government at all levels and organizations involved in tertiary education must share in its management. The University is the highest level of schooling. Over the years tertiary education had expanded to reach every sub-region of Nigeria

The following are the list of universities in Nigeria as at June, 2009.

A. Federal Universities	Year Founded
1 Abubakar Tafawa Balewa University, Bauchi	1988
2 Ahmadu Bello University, Zaria	1962
3 Bayero University, Kano	1975
4 Fed. Univ. of Petroleum Resources, Effurun	2007
5 Federal University of Technology Yola.	1988
6 Federal University of Technology, Akure	1981
7 Federal University of Technology, Minna.	1982
8 Federal University of Technology, Owerri	1980
9 Micheal Okpara University of Agriculture, Umudike	1992

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10	National Open University of Nigeria, Lagos.	2002
11	Nigerian Defence Academy, Kaduna	1985
12	Nnamdi Azikiwe University, Awka	1992
13	Obafemi Awolowo University, Ile-Ife	1962
14	University of Abuja, Gwagwalada	1988
15	University of Agriculture, Abeokuta.	1988
16	University of Agriculture, Makurdi.	1988
17	University of Benin	1970
18	University of Calabar	1975
19	University of Ibadan	1948
20	University of Ilorin	1975
21	University of Jos	1975
22	University of Lagos	1962
23	University of Maiduguri	1975
24	University of Nigeria, Nsukka	1960
25	University of Port-Harcourt	1975
26	University of Uyo	1984
27	USMAN Danfodio University	1975

(Source-National Universities Commission, 2009).

B.	State Universities	Year Founded
1	Abia State University, Uturu.	1980
2	Adamawa State University Mubi	2002
3	Adekunle Ajasin University, Akungba.	1999
4	Akwa Ibom State University of Technology, Uyo	2004
5	Ambrose Alli University, Ekpoma,	1980
6	Anambra State University of Science & Technology, Uli	2000
7	Benue State University, Makurdi.	1992
8	Bukar Abba Ibrahim University, Damaturu.	2006
9	Cross River State University of Science & Tech., Calabar	2004
10	Delta State University Abraka	1992
11	Ebonyi State University, Abakaliki	2000
12	Enugu State University of Science and Tech., Enugu	1981
13	Gombe State Univeristy, Gombe	2004

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14	Ibrahim Badamasi Babangida University, Lapai	2005
15	Imo State University, Owerri	1992
16	Kaduna State University, Kaduna	2004
17	Kano University of Science & Technology, Wudil	2000
18	Kebbi State University, Kebbi	2006
19	Kogi State University Anyigba	1999
20	Kwara State University, Ilorin	2009
21	Ladoke Akintola University of Tech., Ogbomoso	1990
22	Lagos State University Ojo, Lagos.	1983
23	Nasarawa State University, Keffi	2002
24	Niger Delta University, Yenagoa	2000
25	Olabisi Onabanjo University Ago-Iwoye	1982
26	Ondo State University of Science & Technology., Okitipupa	2008
27	Osun State University, Oshogbo	2006
28	Plateau State University, Bokkos	2005
29	Rivers State University of Science & Technology	1979
30	Sokoto State University, Sokoto	2009
31	Tai Solarin Univ. of Education, Ijebu-Ode	2005
32	Taraba State University, Jalingo	2008
33	Umaru Musa Yar' Adua University, Katsina	2006
34	University of Ado-Ekiti	1982
35	University of Education, Ikere Ekiti	2008

(Source-National Universities Commission, 2009).

C. Private Universities

		Year Founded
1	Achievers University, Owo	2007
2	African University of Science & Tech., Abuja	2007
3	Ajayi Crowther University, Ibadan	2005
4	Al-Hikmah University, Ilorin	2005
5	American University of Nigeria, Yola	2003
6	Babcock University, Ilishan-Remo	1999
7	Bells University of Technology, Otta	2005
8	Benson Idahosa University, Benin City	2002
9	Bingham University, New Karu	2005

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10	Bowen University, Iwo	2001
11	Caleb University, Lagos	2007
12	Caritas University, Enugu	2005
13	CETEP City University, Ibadan	2005
14	Covenant University Ota	2002
15	Crawford University Igbesa	2005
16	Crescent University,	2005
17	Fountain Unveristy,Oshogbo	2007
18	Igbinedion University Okada	1999
19	Joseph Ayo Babalola University, Ikeji-Arakeji	2006
20	Katsina University, Katsina	2005
21	Lead City University, Ibadan	2005
22	Madonna University, Okija	1999
23	Novena University, Ogume	2005
24	Obong University, Obong Ntak	2007
25	Pan African University, Lagos	2002
26	Redeemer's University, Mowe	2005
27	Renaissance University,Enugu	2005
28	Salem University,Lokoja	2007
29	Tansian University,Umunya	2007
30	University of Mkar, Mkar	2005
31	Veritas University	2007
32	Wesley Univ. of Science & Tech.,Ondo	2007
33	Western Delta University, Oghara	2007
34	Wukari Jubilee University,	2005

(Source-National Universities Commission, 2009).

However, most management institutions in Nigeria that offer graduate management programmes are public universities. It is therefore gratifying to note that construction management at post-graduate level is offered by very few of these listed universities in Nigeria.

These Universities are:

University of Lagos, Akoka.

Obafemi Awolowo University, Ile-Ife

Ahmadu Bello University, Zaria.

University of Jos, Jos.

Federal University of Technonology, Akure.

Enugu State University of Science and Tech., Enugu

Taking critical look at the above statistics, it may be assumed that these few places out of the whole lot will be experiencing a lot of pressures in terms of admission, infrastructural facilities, heavy work load on the faculty members and financing. These are some of the issues this study is geared towards looking at.

Education and Professionalism

Construction management is an inter-disciplinary programme of studies that builds upon the concepts and methodologies of management, engineering, architecture, law, information technology, social and behavioural sciences and combines theory with practice. As many are looking to the future of construction with the sole aim of achieving the project objective of time, cost quality; they are equally concerned with the future of construction education. This is in an effort to determine how construction educators can best meet the requirements of the industry (Richard,1999).

According to Fryer,(1997), the construction management as a discipline has steadily gained status and recognition in the eyes of industry clients and other built environment professionals. In defining construction management professionals. Murdoch and Hughes, (1996) suggest they should:

- i) Possess a distinct body of knowledge or identifiable corpus of expertise.
- (ii) Hold the appropriate qualifications required by the appropriate professional body
- (iii) Provide a service to the public by considering their needs before the needs of their own.
- (iv) Hold mutual recognition of other professions.

Architects, Engineers and Quantity Surveyors may perform the role of a construction manager if they have the necessary skills and experience. The analysis of professional needs in Construction project management is a key factor for defining relevant training programmes either for graduate or professional development. This forms part of the reasons to launch this inquiry as it affects the Nigeria construction industry.

According to the reports of the conference of National construction Industry Education Forum (NUEF) of United States of America held in 1999 construction management education should respond to the importance of technology as an engine of change. Some of the salient issues addressed as very important to the content of future University construction education are:

- (i) Globalization
- (ii) Research fund
- (iii) Preparing students for leadership roles
- (iv) International construction opportunities
- (v) Changing contract delivery systems
- (vi) Teaching a large number of people.

The business and construction industry is becoming increasingly global and the role of the project management professionals now includes many front end services, which increases the required skill set of new graduates (Choudhury, 2000; Kay, 2001).

In the report of research by the European Union No PL/02/B/F/PP/140 029, 2004 (Model of Professional qualification Structure and new methods of promotion, certification and mutual recognition of managerial skills in the construction industry) relevant management areas in construction were identified as follows:

1. Project Conception Development /Feasibility
2. Planning and Scheduling
3. Risk Management
4. Corporate Marketing
5. Project Cost Estimation and Cost Management
6. Quality Management

7. Procurement and tendering Procedures
8. Contract Condition
9. Joint Ventures/Partnering (PPP)
10. Health and Safety Management
11. Handing Over/Guarantee Period
12. Environmental Management jobs of a ent.

Construction Management Skills

Construction management graduates must possess three essential attributes. They should have practical experiences so that they are thoroughly familiar with the workings and intricacies of the industry. Without such a basic grounding of construction fundamentals the construction management graduate would be unprepared to carry out their tasks and responsibilities. Secondly, the graduate must be familiar with various tools and techniques for planning, scheduling and controlling construction operations. Thirdly, the graduate must have the personality and insight that will enable them to work harmoniously with other people, often in very strained and trying circumstances. Graduates must be able to acknowledge that they cannot achieve everything through their own efforts alone (Sears and Clough, 1991.).

Back and Saunders (1998) states that engineering graduates are required to possess an array of skills (personal, business and technical), as they are required to deal with people at strategic, technical and operational levels. Job advertisements clearly show that employers are looking for people who can communicate well, write reports, work well in teams and negotiate with and influence.

Construction managers must be good active listeners, as the information they require to perform their daily task jobs, solve problems and work effectively with others, will come from verbal interaction in team environments (Bacs and sanders, 1998). In the same way, (Rance,1999,) states that employers are looking for people who can communicate clearly and concisely, and who work well with others and build up networks and relationships both in the work place and with clients. Graduates who are able to stay abreast with managerial and technological developments within the industry have also been found to be important skills that graduate should possess (Daris and Creste, 1998) .Together with a strong academic record, employers want construction management graduates who are team players and leaders, good personal attributes, information technology skills, language ability, problem solving skills and a good awareness of the business environment (Riggs, 1998) Guthine (1994), found that graduates were often seen as having communication skills, inability to relate to others, a lack of understanding for other employees (especially those at a trade level), and a lack of ability to facilitate others working in the same organization. Therefore, managers in construction organisations believe that graduates need greater skill levels in law and building contracts and more practical experience (Daris and Csete,1998).

In the study carried out by P.E.D, Love (2002), some of the skills requirement of construction managements graduates were evaluated in terms of meeting the expectations of employer. These skills are: adaptable to changing work environment; computer literacy; time management; exercise professional judgment; practical building knowledge; interpersonal; work leadership capability; oral communication; problem solving; environmental awareness; teamwork; update professional knowledge; written communication.

The author therefore concluded that graduates of construction management must be able to master more skills than just technical details in order to be productive in the workforce. They must be prepared to meet customer requirements, to work within teams, to manage information, to work efficiently and effectively and comply with legislative constraints. To improve the industry's productivity performance, a good management skill is very central with the increasing complexity of

design and production. Therefore, construction management programs must produce graduates who have the necessary skills to meet these demands.

Conclusion

This project was aimed at appraising the postgraduate construction programme in Nigeria. There was an attempt to find out what construction management is all about, the facilities necessary to achieve the objective of high quality teaching and research work. The study revealed that there is a significant relationship between employers' expectations and performance of graduates of construction management. Also, there is no significant difference in employers' work experience on expectations of graduate construction management. It can also be concluded that there is no significant difference in employers' type of organisation of graduates of construction management.

Recommendations

Public universities in Nigeria face severe resource constraints because they depend on government funding. For this reason, it is recommended that they capitalize on their alumni base since they can provide link to the business community and donate funds to improve infrastructure. They can also provide a feedback base to the school with respect to the quality of education.

The universities should reach out to the private sector and other institutions both within and outside the country. Particularly the locational advantage of the University of Lagos should be a tool in networking their activities with the private sector to develop a robust infrastructure.

In line with the observation of graduates of construction management and given the challenges in the construction today; universities should re-evaluate their curricula. They should modify where necessary so that they can equip construction management graduates to meet the challenges ahead. The expectations are high from the industry; therefore the graduates are to be equipped with total skills to perform effectively.

An evaluation to provide acceptable level of skills in how information and communication technologies can be used to improve business practices. The ability to communicate (particularly written communication) is imperative. Graduates should be able to work independently, and improve their professional knowledge from time to time. There should be a partnership forum with employers to collect feedback information about the expectations of construction management graduates. This will serve as a platform of quality assurance for providing useful information that can help to improve curricula from time to time. This means that the construction management courses need to be broader in their curriculum if they are to exceed the expectation of employers.

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