# AN ASSESSMENT OF EDUCATION AND TRAINING NEEDS OF SKILLED OPERATIVES WITHIN THE NIGERIAN CONSTRUCTION INDUSTRY

**Ezekiel M. Awe[1], Paul Stephenson and Alan Griffith**
*Division of Built Environment, Faculty of Development and Society, Sheffield Hallam University, UK*

The challenge of skilled workforce shortage is one of the most critical threats to the economic health of many nations around the globe. Skilled labour shortage affects various aspects of construction projects and impact on time, cost and quality of work. Consequently, this may jeopardise the achievement of economic benefits for which such projects are conceived. Nigeria as a country undergoing economic reform needs a productive, competent, and flexible workforce to further her economic development. However, shortage of skilled workforce, not just in terms of quantity but also of quality is the most pressing issue in the nation's construction sector; and is already having serious implications for both businesses and the economy generally. This study aims at examining the problems confronting the vocational education and training of selected skill occupations with the view to determining possible solutions to the current problem. The selected trades for the study are limited to wet trades such as masonry and concrete work. The sample population includes Professional Builders, selected relevant practising skilled operatives, technical/vocational school trainers and trainees. The research methodological approach will embrace both quantitative and qualitative methods and data will be collected from selected states within Nigeria, and in the UK for the purpose of obtaining overview of how developed nations are coping with the same phenomenon and how the UK approaches could be applied to the Nigerian's situation. The findings will provide the tool for developing a workable 'best practice framework' for the vocational education and training of trade operatives working in the nation's construction industry. The research is part of an on-going PhD programme aimed at finding practical solutions to the construction industry's skill shortages in Nigerian; Africa's most populous nation. This paper is being presented at this stage of the research as a theoretical piece prior to data collection.

Keywords: labour shortage, skilled operatives, technical education, vocational training

## INTRODUCTION

The issue of workforce shortages is one of the most serious threats to the economic health of many nations around the globe. The lack of skilled labour affects schedules and costs, which in turn could derail or critically delay important projects and jeopardise the economic benefits such projects are expected to generate (COAA 2005; Ireland 2007). The shortage of skilled labour is one of the most pressing issues today and is already having serious implications for both business and the economy (Connor 2006; McCausland 2006). The Construction industry, like other aspects of industrial development, is experiencing severe and prolonged shortages of 'human

[1] foluawe8108@yahoo.com /Ezekiel.M.Awe2@student.shu.ac.uk

Awe, E.M., Stephenson, P. and Griffith, A. (2009) An assessment of education and training needs of skilled operatives within the Nigerian construction industry. *In:* Dainty, A. (Ed) *Procs 25th Annual ARCOM Conference,* 7-9 September 2009, Nottingham, UK, Association of Researchers in Construction Management, 685-94.

power', not just in terms of quantity of workers but also in terms of quality, which may put the world's growing economy at risk (Connor 2006; McCausland 2006). There has never been such a period in history when the diversification of craft occupations has increased the challenges of skilled workforce training. Furthermore, the current global economic melt down with its resultant effects on the construction industry like other sectors of the economy; necessitates a well trained, competent, and tested workforce for a competitive performance in the industry. As self employment continues to rise, competition is becoming more severe, contract times are shorter, profit margins are smaller and specialisation and fragmentation of various trades is increasing; which ultimately presents problem of finding key skilled people such as bricklayers, carpenters, plasterers and electricians (Dennis 2004; CPA 2004; TCE 2007).

## PROBLEM IDENTIFICATION

Nigeria as a developing country with a growing population and commensurate housing needs requires the services of skilled workforce on construction sites. In the building and construction Industry, skilled workers such as bricklayers, blocklayers, carpenters, painters, amongst others, form a large part of the site labour force whose input determine; to a great extent, the quality of the industry's products (Obiegbu 2005; Akindoyeni 2005). At the present time, there is a short fall in the supply of these categories of site operatives (NHTG 2005). The age-old method of locally organised apprenticeship scheme is becoming obsolete. The aged and retiring site operatives are not wishing that their children take to their trades; rather, their goals are for their children and wards to become architects, engineers, doctors, and accountants (Dennis 2004 and Ireland 2007). McCausland (2006) observed that gone were the days when skills were passed from father to son. Now young people seem to eschew the high-end construction trades in exchange for the lure of promising positions in technology or other emerging fields, leaving a shortage of skilled workmen in the construction industry. The cream of the nation's youth no longer shows interest in skill acquisition; a case which is not the same with developed country like the UK where the CIOB (2008) reports that the demand from young people for apprenticeship is outstripping the number of training place available in the industry. In 2007 Construction skills survey report, the industry's sector skills council was only able to place 8,500 willing people into apprenticeships out of the 50,000 who applied. In Nigeria, however, many who would have been trained to acquire necessary skills take to petty or even serious crime. Some of the artisans that are engaged on construction sites are essentially incompetent. Some of the trained craftsmen who should be engaged on construction sites have taken to other supposed financially lucrative businesses such as 'okada' commercial motor cycle transportation (Awe 2006). Emphasis on skill instruction in technical colleges and vocational training centres has become secondary, due to poor funding and a misplaced emphasis and misdirected focus. Awe (2004), Akindoyeni (2005) and Obiegbu (2005) also observed that problems of low wages, absence of a clear-cut career path; and a lack of organised apprenticeship training schemes are evident in the industry at the present time. Most of the Nigerian technical school students see themselves as being trained to perform supervisory roles on completion of their training; the Polytechnics and Universities producing middle level and high level manpower respectively. If this trend goes unchecked; a period will come when there will be many graduates of construction related fields but few or an insufficient number of craftsmen to carryout the actual work; a situation that will be catastrophic for the Nigerian construction industry and

the nation's economy as a whole. Construction work, as at the present time in Nigeria is labour intensive, unlike in some advanced countries such as the UK where a great percentage of site operations have been mechanised thus requiring fewer numbers of operatives on the construction sites (VanDoren 2008).

## AIM AND OBJECTIVES OF THE STUDY

In the light of the above background and problem, this research aims at examining the System of Vocational Training and Education for Craftsmen in the Nigerian construction industry and the effects of this on the supply of competent, productive and confident craftsmen for the industry.

The objectives of the research are to:

- examine the past and current methods of Vocational education/Training for Craftsmen.
- determine the problems militating against Vocational Education/Training in Nigeria.
- investigate reason(s) why the younger generation in Nigeria is not showing interest in Construction related Vocational Training/Skill acquisition.
- ascertain the efforts and innovations of other countries on vocational Training to produce Craftsmen.
- develop and validate a workable framework for the Vocational Education/Training of related craftspeople

## TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) IN NIGERIA

Onjewu (2005) reviews that the earliest moves towards Technical and Vocational Education and Training (TVET) in Nigeria could be traced to as far back as 1936, when Yaba Higher College was established. The 1950s saw the establishment of the technical institutes at Kaduna and Enugu, then in the 1980s, those in Ibadan and Auchi. At independence, it was noted that Nigeria's education was more biased towards the traditional literacy and academic subjects resulting to lack of respect for manual and technical achievement. Hence the Ashby commission in 1960 made recommendations for the strategic development of technical and commercial education leading to the award of the City and Guilds London Institute (CGLI) and the Royal Society of Arts (RSA). Conscious efforts for the formulation of a national programme on TVET in Nigeria commenced in 1962 with a seminar organised by the Federal Ministry of Education (FME) and sponsored by USAID. Despite these efforts, not much progress was made, hence in 1969, a National curriculum conference was held where TVET was given additional attention resulting in the formulation of the National Policy on Education (NPE), published in 1977, and revised in (1981, 1998 and 2004). A blueprint on the NPE was published in 1978-79 in which much attention was given to technical education with focus on issues like the pattern of technical education, training of artisans, craftsmen and technicians/technologists beginning at secondary schools level, training of technical teachers, encouraging women into technical education, and a clear path or avenues for advancement from one level to another. The 6-3-3-4 education and training scheme was a product of the NPE which provides for 6 years primary education, a 6 year secondary education which runs in two segments of 3 years each for the junior secondary school (JSS) and senior secondary school (SSS), and a 4 year university undergraduate programme. At the JSS level, the training in integrated science and

introductory technology are provided to equip learners both academically and vocationally. Further developments led to the establishment of more technical colleges and Polytechnics in order to increase graduates of basic crafts and technicians. The National Board for Technical Education (NBTE) was established in 1977 to coordinate and advise on all aspects of technical education outside the universities' scheme. The NBTE, in order to ensure that the technical education scheme is tailored to address local skill needs, phased out the complex multiplicity of foreign crafts qualifications. These were then replaced with the new National Technical Certificate (NTC) and National Business Certificate (NBC) along with their advanced levels. Consequently a special examination body, National Business and Technical Examination Board (NABTEB), was established in 1995 with the sole aim of administering the technical and business examinations. However, it has been proved by Grey Longe Commission (1992) that the nation's efforts on technical education had only concentrated on the production of high level manpower to the detriment of the production of low and middle level manpower mostly needed for national development and technological advancement.

Awe (2004) observed that a critical analysis of the above model reveals that emphasis on training of craftsmen is embedded in the Technical College curriculum, but there is no specified path or formal centres for Vocational Training. The present orientation in most Technical Colleges shows that the focus is the preparation of students for further education in tertiary institutions. The National Policy on Education, section 4, clause 22, states that students who complete Junior Secondary school shall be streamed into - the Senior Secondary, the Technical College, an out-of-school vocational centre; an apprenticeship scheme in the ratios of 60:20:10:10% respectively (FGN 2004). The reality of what is obtainable presently indicates that, the number of Technical colleges available is grossly inadequate to absorb 20% of the junior school graduates due to the enormous capital needed to finance the practical contents of the instruction. Many of the then prestigious 'trade centres' later named 'Technical Colleges' are now becoming glorified secondary schools due to under-funding and gross reduction, if not total elimination, of the practical work contents in their instructional modes. The Federal Government Technical Colleges (FTC) are now called Government Science and Technical Colleges (FSTC). The vocational training and apprenticeship schemes specified by the NERDC is left uncontrolled and without regulation, these aspects of manpower training are mainly left to individuals or companies; the majority of who prefer to engage experienced hands rather than get involved in the difficult, expensive and time wasting ventures of training and developing new operatives. The National Open Apprenticeship Scheme (NOAS) introduced by the National Directorate of Employment (NDE); though a good policy and more in the right direction needs to be vigorously pursued in a more organised manner; in order to meet the immediate and future much needed manpower of the nation.

## NATIONAL QUALIFICATION FRAMEWORK (NVQF)

In November 2004, the National Board for Technical Education (NBTE) organised a two-day seminar with participants drawn from the public and private sectors including, the British National Vocational Qualification (NVQ) consultants from UK, Federal Ministries especially Education, Science and Technology, Labour and Productivity, Professional Bodies, and representatives from colleges of Technology. The major goal was to deliberate on the possibility and need for the formulation of a National Vocational Qualification Framework (NVQF). The forum provided an opportunity for stakeholders in the Technical/Vocational Education and Training

(TVET) sector to brainstorm on developing appropriate methodologies for assessing, monitoring and evaluating skills in technical and vocational qualifications (NVQs) and proof of a person's ability to do specific jobs. The seminar was organised in recognition of the fact that a workable, nationally accepted and appropriate NVQF can only be developed through wide consultation with relevant stakeholders in Nigeria in order to chart a road map for its implementation (NBTE 2004). The communiqué issued at the end of the forum underscores the need for a National Framework for training of skilled workforce in every sector of the economy. The NBTE forum gave birth to a modified model shown in Figure 1; which accommodates the Innovation Enterprise Institutions (IEIs) and the Vocational Enterprise Institutions (VEIs). A close observation of the model depicts a hurriedly advocated proposal which is not well-thought-out and still exhibits the age-old marginalisation of vocational education prospects. Relevant and pertinent questions that could be advanced on the model include: What is the background of those to be streamed for the IEIs and the VEIs? How would the proposal exacerbate or ameliorate the long drawn agitation for parity between polytechnic and university education graduates? Are the polytechnics now being relegated to advanced vocational institutes order that Technology education institutes? What link exists between the Upper Secondary, Technical Colleges and the Vocational and Innovation Enterprise Institutes and the Colleges of Education? What roles will the industrial sectors which as of now are less concerned with training going to play in the curriculum of the proposed IEIs and VEIs? Would the Polytechnics and Monotechnics be solely owned by private investors or by the government or are they going to be jointly managed? What is the assurance that it will not be 'business as usual' - all theory and no practice? How would this new concept not be plagued with the same malaise of mid-stream abandonment and neglect; as is the case with the previous or existing technical/vocational training policies? What strategy is to be employed or embedded in the new proposal to attract the Nigerian youth who as of now are least interested in taking to skill acquisition? What is the place of the age-old apprenticeship scheme in the new proposal? An in-depth analysis of the foregoing and similar questions with the view to providing workable solutions is imperative; if the catastrophic pit-falls that plagued the previous policies on Technical/Vocational Education and Training in the country is to be avoided. There is need for the formulation of a workable and result oriented Framework which will be comprehensive and workable enough to tackle the lapses and ineffectiveness identified in similar policies in the past. Thus the relevance of this research which seeks to formulate a 'Best Practice Framework'; which also could be generalised, for selected trades in the construction sector of the Nigerian economy.

## THE NIGERIAN CONSTRUCTION INDUSTRY

The Nigerian construction Industry has experienced changes over the years since the oil boom of the early seventies, both in terms of volume and complexity of work. Projects such as construction of roads, buildings, bridges, dams, sewage plants, has been executed on large scales (Adeniji 1994). Because most of the technology of construction comprises of both local and imported, there is a need for the training, development and constant supply of indigenous manpower to acquire, use and adapt the available technologies (Nwagwu 2004; Onjewu 2005). It has been observed that in most of the less developed countries, the stock of skilled manpower has not been able to match the level of economic activities and development. Such shortages in manpower have been experienced in many urban areas where massive unemployment is accompanied by shortage of relevant skilled craftsmen in the building trades such as

bricklayers, blocklayers, carpenters, plasterers (Akindoyeni, 2005; Obiegbu, 2005). In Nigeria in the past, apprentice systems were widespread throughout all occupations;

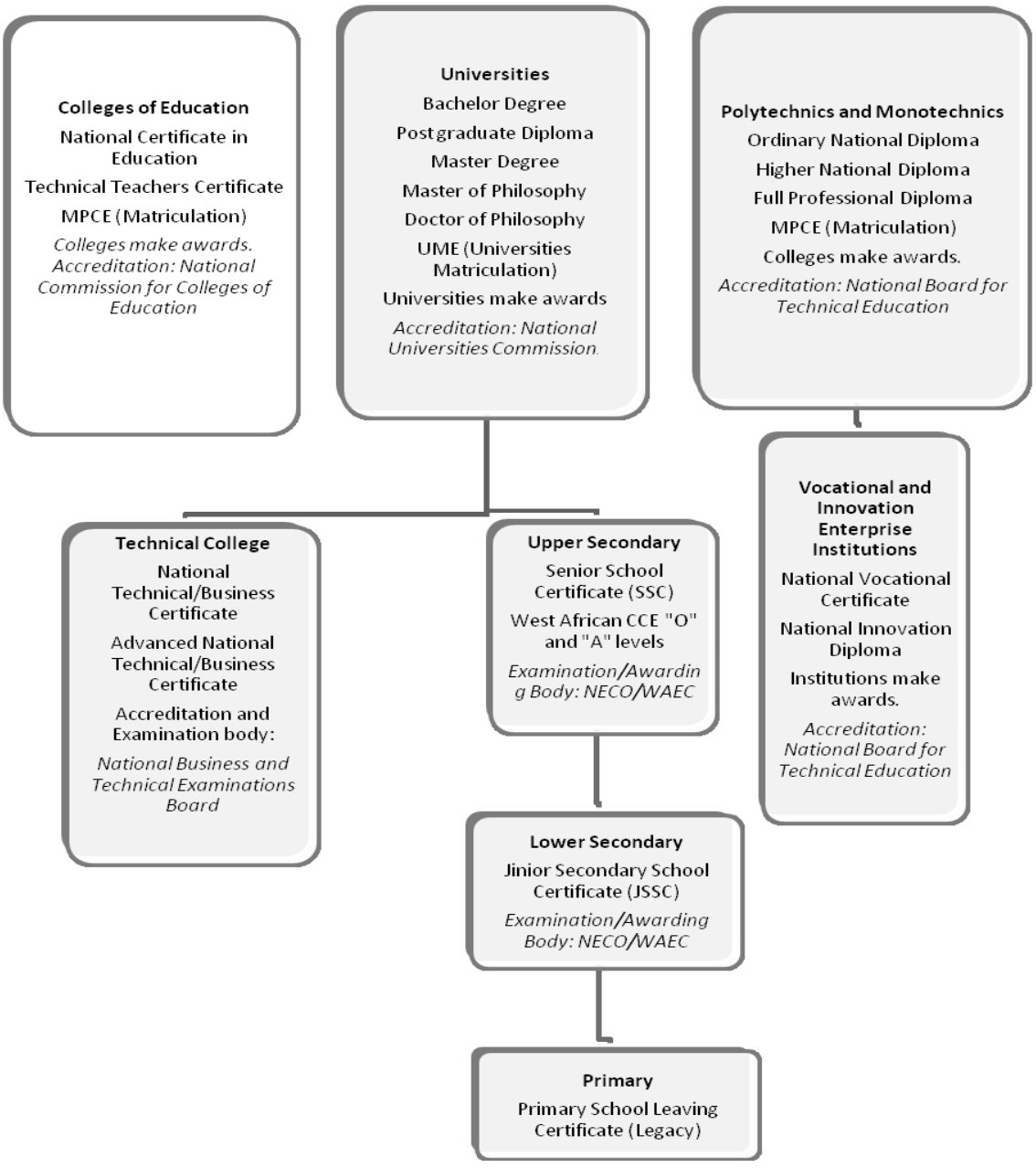


*Figure 1: NBTE model of Nigerian Education system*

*Source: Education and Training System in Nigeria (2005)*

the trainee provided service to the teacher over a period of years and eventually 'ends-up' on his own. By the 1970s, education experts were strategising on how the system could be integrated into the more formal schooling of the young; but the question remained unresolved. Eventually, over time the interest dwindled; and until the present time apprenticeships and vocational training schemes for the construction trades are still completely inadequate in terms of the numbers produced and the

quality of skills imparted (Esu and Junaid 2008). Abdulgafaru (2003) submits that some difficulties encountered in personnel development in the Nigerian construction industry include:

- Mobility of construction personnel within the industry such that skilled men trained by the public organisations are constantly hired by private sector.
- The un-organised nature of trade unions and trade organisations and their attitude to training.
- The general level of education in the country which is an important factor in determining impartation and comprehension of skills.
- Migration of skilled workers to richer markets.
- Shortage of indigenous technical personnel.
- Seasonal availability of construction personnel, which affects labour intensive construction in rural and urban areas because it required retraining of manpower and because it introduces fluctuation in the supply of the main construction resource.
- The big, establishment and mostly foreign construction organisations do not identify with the global manpower policy of the countries in which they operate.

  It is imperative therefore, that efforts are directed at tackling the manpower development challenges, and more particular, those that relates to training and education of the construction site skilled operatives.

## SIGNIFICANCE OF THE STUDY

The structure and organisation of the construction industry is dependent on the nature of work to be done i.e. building or civil engineering works, the technology of choice and the social and economic environment. The construction industry in Nigeria is structured along the line of small to medium and large organisations. All the various categories of the structure need competent craftsmen for successful project delivery to time, cost and quality. The significance of this study would be evident by the discovery of the problems militating against effective training and development of craftsmen and the effects on the supply of these categories of workforce in the industry. If the solutions proffered by the study are adequately pursued; the perennial problem of shortage of craftsmen and artisans in the construction industry could be drastically reduced if not completely eradicated. Every sector having a stake in the training and utilisation of construction related craftsmen will be awakened to their roles, and the industry in particular and the nation as a whole will be better for it. Figure 2 shows a concept model of the study significance.

## SCOPE AND LIMITATIONS OF THE STUDY

The scope of the research will be limited to the education, training and supply of building related tradesmen. The study will focus on the Nigerian Construction sector, since the overall aim of the study is to develop a framework for vocational training and supply of competent site operatives for the nation's construction industry. The study will also examine the methods of training construction related workpeople

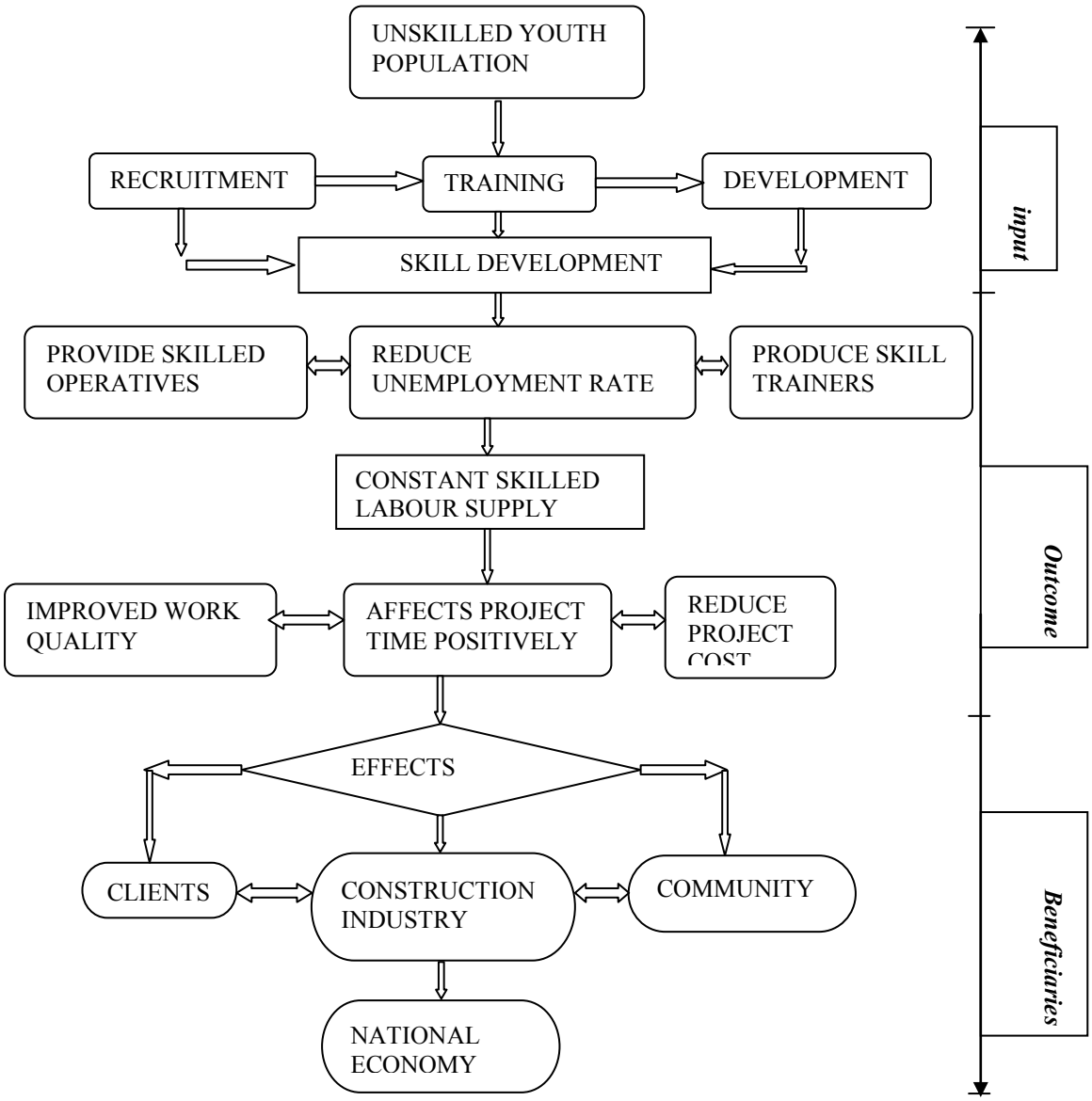


*Figure 2: Conceptual model showing the process, relationship and effects of recruitment and training of construction site operatives*

in other developed economy with the view to adequately formulating a workable framework for effective training of construction site operatives.

The relevant data for the purpose of this study are expected to be collected in selected states and major cities in Nigeria and within the UK. The data collected in the UK will serve the purpose of providing an overview of how developed nations are coping with the phenomenon with the view to applying the same to the Nigerian situation. Data collection tools will be administered among Administrators and Trainers of

Technical/Vocational Training Institutes; Professionals involved with craftsmen training and development; selected unskilled youth (to unravel reasons why youth no longer shows interest in skill acquisition), Students and Trainees of Technical and Vocational Training Institutes and Craftsmen currently practicing on construction sites.

## CONCLUSION

Constant and adequate supply of competent, confident and productive skilled site operatives is a mandatory requirement for effective functioning of the construction industry. Any shortage in the supply of these sets of workers will have an adverse effect on the output of the industry, affect other sectors that are the end users of the industry's product; and eventually affect the developmental programme and the overall economy of the nation. It is expected that this research will help to develop and validate a workable and a 'Best Practice Framework' for the Vocational Education and Training of Construction related craftspeople, which will in-turn ensure a constant supply of competent workforce for the construction industry.

## REFERENCES

Abdulgafaru, A S (2003) Human Resources Development in the Building Industry. *Unpublished technical paper presented at NIOB 33rd AGM*, 10-13 September 2003.

Adeniji, A (1994) Organised Apprenticeship Training for Tradesmen in the Construction Industry in Nigeria: Need for a policy. *An unpublished paper delivered at NDE seminar*, 10-12 August 1994, NDE Centre, Lagos.

Akindoyeni, A (2005) Nigerian Building Craftsmen: Which way forward? *Paper presented at the NIOB craftsmen's summit*, 7th July 2005, Yaba College of Technology, Lagos.

Awe, E M (2004) The Nigerian Technical Education System and manpower need in the Construction Industry: The Missing Link, *Journal of Education Technology and Management*. School of Technology Education, FCE (Tech) Lagos, 5(4), 232-241.

Awe, E M (2006) The Roles of Building Technology Education in Entrepreneurial Development in Nigeria, Paper Presented at Academic Staff Union of Polytechnic (ASUP) Annual National Conference, 7-10 November, Yaba College of Technology, Lagos.

CIOB, (2008) Skills Shortage in the UK Construction Set to Worsen. Chartered Institute of Building news. May 14 2008, UK. Retrieved June 20 2008, from http://www.ciob.org.uk/news/view/1750

Connor, T O (2006) Worker Shortage Crisis in Alberta. Canada Wise Company. January 4, 2006. Retrieved June 21 2008, from http://www.expats.org.uk/features/canadawise-workershortagecrisis.html

COAA, (2005) Alberta's Future is Bright, but could be dimmed by Labour Shortages. Construction Owners Association Release, December 2005. Canada.

CPA (2004) Weak Infrastructure and Private sector dampens construction growth. Construction Industry Trade Surveys. February 2004. London: Construction Products Association.

Dennis, R (2004) Labour Shortages could worsen as Economy starts to Rebound. Central Penn Business Journal. June 18 2004. Retrieved June 13, 2008 from http://findarticles.com/p/articles/mi_qa5295/is_200406/ai_n24280507/print

Esu, A and Junaid, A (2008) Educational Development: Traditional and Contemporary. On Line Nigeria Daily News. July 7 2008. Retrieved July 7, 2008 from http://www.onlinenigeria.com/education/index.asp?blub=536

FGN, (2004) National Policy on Education. Federal Government of Nigeria. National Education Research and Development Council Press, Lagos.

Ireland, B (2007) Wanted: Skilled Labour. A Robust Economy Strains the ranks of a Qualified Workforce. Skilled Labour Shortage in America. USA. Penton Media Inc. Retrieved May 26, 2008 from http://ecmweb/mag/electric_wanted_skilled_labor/index.html

McCausland, C (2006) Labour Shortages Solutions. Combating the Lack of Skilled Craftsmen. The Builder News Magazine. USA. Retrieved June 26, 2008 from http://www.buildernewsmag.com/viewnews.pl?id

NBTE, (2004) Unpublished Communiqué of the National Seminar on Vocational Qualifications Framework: A Tool for Vocational Training Reform, 1-2 November 2004, NBTE Secretariat, Kaduna.

NHTG, (2005) Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge. National Heritage Training Group, Skills needs analysis in England. Retrieved June 11, 2008 from www.nhtg.org.uk

Nwagwu, J U (2004) Alleviating Poverty through Vocational Education: The Nigerian Experience. Faculty of Education, Imo State University, Owerri. Retrieved 17 September, 2008 from http://www.gla.ac.uk/centres/cradall/docs/Botswana-papers/Nwagwupaper_61pdf

Obiegu, M E (2005) Nigerian Institute of Building Craftsmen Summit. President's Address, 7th July 2005, Yaba College of Technology, Lagos.

Onjewu, M A (2005) Assessing Technical and Vocational Education in Nigeria: A situation analysis of Kaduna Polytechnic. Paper presented at 31st Annual Conference on International Education Assessment, 4-9 September, Abuja.

TCE, (2007) Skills Shortage 'could Scupper Olympic Building'. Construction Engineering News. The Career Engineer, July 25, 2007. Retrieved June 13, 2008 from http://www.thecareerengineer.com/engineering-news-archive/.contruction/

VanDoren, V J (2008) Skilled Labour Shortage prompts growth in Automation Services. Reed Business Information Control Engineering and Packaging Digest 01/01/2008. Reed Elsevier Inc. Retrieved June 13, 2008 from http://www.packagingdidgest.com/index.asp/articleID.