

Impact of Vocational Training on Skilled Labour shortage within the Nigerian Construction Sector

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Abstract

The Construction industry is generally a labour intensive enterprise, especially in developing countries. Even in a developed economy where a great percentage of site operations have been mechanized; continuous availability of competent and confident site operatives both in terms of quality and quantity cannot be over-emphasized. Skilled manpower shortage is a global malaise affecting industrial and manufacturing sectors in many nations and the effect is evident in the Nigerian construction sector. This paper aims at examining the nature and degree of labour shortages in Nigeria and other selected nations around the globe. The focus also includes the problems of vocational training in Nigeria, and the effects on the supply of artisans in the nation's construction industry. The selected group for the study are those in the masonry and concreting trades. The data for the paper emanated from the preliminary pilot study conducted as part of the process in ongoing PhD research work. The results from quantitative and qualitative data collected identified challenges militating against effective vocational training in the Nigeria construction industry. The identified problems amongst others include: poor funding of vocational education, sordid implementation of vocational/technical education policies, and poor maintenance culture. Other problems include obsolescence that has rendered facilities for practical works in schools non-functioning; coupled with non-availability of modern tools and equipment for vocational knowledge impartation, non-participation of private sector in training of craftsmen and reduced emphasis on apprenticeship training. The problems affecting vocational and skilled training reflect on the trainees, who in turn, on graduation, lack competence and confidence, produce substandard works or are un-able to practice their trades after training; thus resulting in shortages of labour both qualitatively and quantitatively. The paper confirms the existence of labour shortage both in terms of quality and quantity and opines that the formulation of an 'all-encompassing' best practice framework that will address the skilled workforce training would be an indispensable antidote towards tackling the current difficulties.

Keywords: vocational training, labour shortages, construction industry, skilled operatives, apprenticeship, craftsmen

1. Introduction

Workforce shortages problem is one of the most serious threats to the economic health of many nations around the globe; shortage of skilled labour affects schedules and costs, this consequently derail or critically delay important projects and put at risk the economic benefits such projects are designed 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 power', not just in terms of quantity of workers that puts the world's growing economy at risk - the quality of workforce is also a noticeable factor. (COOA 2005; 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; because as self employment continues to rise, competition is becoming tougher, contract times are shorter, profit margins are smaller and specialization and fragmentation of various trades is increasing; and right now, it is very difficult to find key skilled people such as bricklayers, carpenters, plasterers and electricians. (Dennis 2007; CPA 2004; TCE 2007).

The CIOB (2008) observes that every sector of the construction industry is experiencing some labour shortage. About 40 percent of respondents to various surveys indicated that they have experienced some labour shortage in the recent past. (Brown, 2005; COAA, 2005; McCausland 2006). As observes by LeClaire (2004), the labour shortage challenge could be hinged on the fact that the percentage of skilled construction workers aged 25 to 34 has declined from 37.5 percent to 28.5 percent between 1988 and 1997 in America; while the percentage of those aged 35 to 44 jumped from 22 percent to 31.5 percent over the same period. The Associated General Contractors of America (AGCA) fixed the average age of construction worker as at 2004 at 47.

Magar (2007) opines that although construction companies in India are prepared to spend money to raise their production capacities, the shortage of skilled workforce would necessitate skillful project management and innovative solutions to prevent bottlenecks. It is difficult to fathom the words 'skilled labour shortage' in a country of a billion people that is getting younger over time, but the challenge of shortage of trained skilled construction labour is glaring in the industry. Magar (2007) submits that the construction industry remains one of India's largest employers of labour, and realizing the need for skilled vocational staff, the industry has begun collaborating with academic institutions to either train staff for plumbing and masonry type work, or to set up in-house training programs. Sooi (2007) reports that the construction industry in Malaysia is grappling with unfilled positions in the skilled workforce sector, he suggests that an immediate solution would be importation of right talents from abroad.

CIOB (2008) in its report on skills shortage survey in the UK construction industry posits that shortage of skills continues to be a challenge for the industry. It predicts that the issue is likely to worsen as the demand for construction increases. The UK construction industry, according to the report, is suffering from a significant skills shortage. ASSA (2008) releases a report stating that Australia's growing labour requirements cannot be met by the native workforce and current levels of

immigration. The logical conclusion from the evidence stated in the report is that Australia's future labour requirements will depend on more immigration.

From the literature reviewed above, the fact that the construction industry in the various countries is currently facing the challenges of labour shortage cannot be over emphasized. Hence, there is need to give adequate attention to vocational training to produce commensurate number of competent skilled workforce to counter or ameliorate the menace.

Nigeria requires the services of skilled workforce on construction sites; the nation is developing with a growing population and attendant housing needs. At present, the demand for skilled workforce such as bricklayers, carpenters, plumbers, painters, amongst others; is far above supply (Akindoyeni, 2005; NHTG, 2005; Obiegbu, 2005). The locally organized apprenticeship scheme which was a major provider of craftsmen is fizzling out; the aged and experienced Tradesmen would rather prefer their descendants to become well educated professionals than to take to their trades (Dennis 2007; McCausland, 2006; and Ireland 2007).

This research therefore, aims at identifying the degree and nature of labour shortage in the Nigerian construction industry and ascertains the relationship of the shortage with the challenges confronting vocational training in the nation.

2. Vocational education and training

Vocational Training is defined variously by different authors; in the view of Oni (2007), Vocational Training is that aspect of education which equips the trainees with practical knowledge and basic knowledge required to enter into the world of work either as employees, freelance or self-employed.

Vocational training is a skill-based instruction targeted at sub-professional educational level and designed to impart a specific vocation with the view to preparing the trainees for the field of work; it is also meant to enhance the trainees performance at work. It includes all forms of instruction that imparts practical skills, technologies and related sciences relating to occupations in the various sectors of economic life (Oranu, 1992; Tappin, 2002; UNESCO, 2005; Dike, 2006; and David, 2008). Vocational training, therefore, is focused in building a self-reliant society.

The development of Vocational Education and Training (VET) in Nigeria dated back to 1936, when Yaba Higher College was established; at independence, the educational system was noted to be more biased towards traditional literacy and academic with little regard to manual and technical achievement.

The Ashby commission made recommendations for the strategic development of technical and commercial education leading to the award of the City and Guilds of London Institute (CGLI) and the Royal Society of Arts (RSA) in 1960. In 1962, concerted efforts towards Vocational Education and Training (VET) commenced with a seminar jointly organized by the USAID and the Federal Ministry of Education (FME).

A National Curriculum conference was held in 1969 to give additional attention to Technical and Vocational Education (TVET); this resulted in the formulation of the National Policy on Education (NPE), published in 1977, and revised in (1981, 1998, and 2004).

The NPE attempted to give attention to technical education with focus on pattern of technical education, training of artisans, craftsmen and technicians/technologists commencing at secondary schools level. The blueprint also gave attention to the training of technical teachers and the encouragement of women into technical education; an attempt was also made to demarcate a clear path or avenues for advancement from one level of training to another (Onjewu, 2005; Oranu, 1992; NQAI, 2008).

3. Problems of vocational training in Nigeria

Nigerian seemingly well structured and closely monitored educational system should normally have enabled and encouraged the nation to produce sufficient number of seasoned craftspeople to meet the needs of the local industries and the challenges in the global economy but the reverse seems to be the case.

Bolaji (2007) notes that the Nigerian educational policy has not been capable of providing the needed manpower development to stir the nation's socio-economic exigencies left by the colonial masters. The policy issue though seems well laid-out but non-directional due to incessant changes. It has become a tradition to abandon policy mid-stream.

Okafor (2000) observes that there is total decline in the quality of training facilities at all levels of Nigerian education system. Many technical and vocational training institutions do not have the necessary facilities for effective teaching and learning.

(Odia and Omofonmwan 2007; Olaitan 1996; and Essien 1998) identify lack of necessary facilities such as tools and adequate workshops to hinder in-depth practical instruction. (Akindoyeni, 2005; Awe, 2005; and Obiegbo, 2005) highlighted reduced emphasis on skills instruction due to poor funding and a misdirected focus. The industrialization of the nation is being delayed due to the inefficiency of the technical education system.

Akpan (1999) submits that technical and applied skills would not be effectively acquired by mere reading of handout and pictures of simulated tools and equipment.

Oni (2007) advocates the need for proper funding of technical and vocational education. Acute shortage of suitable, trained and qualified vocational teachers is another identified bane of Nigeria Technical and Vocational Education (Aina 1991 and Okorie 2000).

Other challenges of the Nigerian vocational educational system as identified by Oranu (1998) include problems related to curricular which include inadequate emphasis on pre-vocational subjects at the primary and junior secondary levels, shortfall in recruitment and exodus of teachers, low student morale, examination-oriented approaches to curricular implementation and inadequate political will.

The general orientation of the Nigerian educational system seems to lay more emphasis on paper qualification than on acquisition of marketable skills; hence that trainees concentrate on accumulation of qualifications at the expense of acquisition of skills. Since the era of oil boom of the early seventies, the Nigerian construction industry has experienced progressive transformation both in terms of complexity and quantity of projects. Vast construction projects such as buildings, roads, dams, bridges, sewage and power plants has been executed (Adeniji, 1994; Akindoyeni 2005).

Since construction technology involves both local and imported, it is imperative that workers are constantly trained and developed locally to acquire and adapt the available technologies (Nwagwu, 2004; Onjewu, 2005).

4. Methods

Survey conducted primarily to pilot study to ascertain the existence of the problem of labour shortage and the factors responsible for the deplorable state of vocational training formed the data for the paper. The questionnaire was divided into two main sections. Section A was closed ended questions structured under the following subheadings, namely:

- Labour Shortage and its nature
- Causes of labour shortages
- Present state of vocational education and training
- Reasons for the present state of vocational education and training
- Relevance of the PhD research goals to the labour shortage problems in the Nigerian construction industry and to the overall economy of the nation.

Section B of the questionnaire was open ended designed to elicit qualitative data and allow the respondents to freely discuss their views on reasons the younger generation in Nigeria seems not to be showing interest in skill acquisition in construction related trades; and the strategies that could be adopted to mobilise the youth for skills training. The closed and open ended questions approach was adopted in order to ensure the collection of robust data during the survey.

5. Data analysis and results

The data collected through the questionnaire were analysed using frequency and percentage weightings; results relevant to this paper are presented as shown in the Tables below.

The population for the study was purposively drawn to cut across the various strata of the targeted population for the main survey. The population characteristic is depicted in Table 1 and 2.

Table 1: Respondents' professional affiliation

<i>Affiliation</i>	<i>frequency</i>	<i>%</i>
<i>Builders</i>	<i>8</i>	<i>35</i>
<i>Architects</i>	<i>3</i>	<i>15</i>
<i>Quantity Surveyors</i>	<i>2</i>	<i>10</i>
<i>Civil/Structural Engineers</i>	<i>1</i>	<i>5</i>
<i>Estate Surveyors</i>	<i>1</i>	<i>5</i>
<i>Vocational Educators</i>	<i>2</i>	<i>10</i>
<i>Vocational/Technical Education Students</i>	<i>2</i>	<i>10</i>
<i>Practising Craftsmen</i>	<i>2</i>	<i>10</i>
	<i>21</i>	<i>100</i>

Table 2: Respondents' professional practice area

<i>Affiliation</i>	<i>frequency</i>	<i>%</i>
<i>Consultancy</i>	<i>4</i>	<i>20</i>
<i>Contracting</i>	<i>2</i>	<i>10</i>
<i>Training/Education</i>	<i>14</i>	<i>65</i>
<i>Project Management</i>	<i>0</i>	<i>0</i>
<i>Construction Management</i>	<i>1</i>	<i>5</i>
<i>Vocational/Technical Education Students</i>	<i>0</i>	<i>0</i>
	<i>21</i>	<i>100</i>

6. Findings

Responses pattern to the various questions in the survey are depicted in Tables 6.1 to 6.5 below. The responses on situation with the Nigerian construction industry labour shortage are reflected in Table 3, causes to which labour shortage could be blamed are depicted in Table 4. The respondents rating or assessment of the present state of vocational education and training is shown in Table 5; while Table 6 reveals the opinions of the respondents on factors responsible for the current state of vocational education and training.

Table 3: Labour Shortages in Nigerian Construction Industry

<i>Opinion</i>	<i>Responses</i>					<i>Total</i>
		<i>Strongly Agreed</i>	<i>Agreed</i>	<i>Disagree</i>	<i>Strongly Disagreed</i>	
<i>a) There is presently a shortage of workforce in the Nigerian construction</i>	<i>Frequency</i>	<i>13</i>	<i>6</i>	<i>2</i>	<i>0</i>	<i>21</i>

<i>industry</i>	%	62	29	9	0	10 0
<i>The shortages is in terms of: b] quantity or number of Tradesmen available for work in the industry</i>	<i>Frequency</i>	10	6	4	1	21
	%	47	29	19	5	10 0
<i>c] the competency or quality of Tradesmen available</i>	<i>Frequency</i>	12	5	4	0	21
	%	57	24	19	0	10 0
<i>d] the shortage is predominant or particular with masonry Trades</i>	<i>Frequency</i>	9	7	4	1	21
	%	43	33	19	5	10 0
<i>e] predominant with wood Trades</i>	<i>Frequency</i>	6	9	6	0	21
	%	29	43	29	0	10 0
<i>f] predominant with plumbing trades</i>	<i>Frequency</i>	9	7	5	0	21
	%	43	33	24	0	10 0

A total percentage of (91.0%) of the surveyed population agreed that there is a shortage of workforce in the Nigerian construction industry. A total percentage of (76.0%) of the participants is of the opinion that the quantity or number of Tradesmen available is below the demand; (81.0%) agreed that the labour shortage nature is in terms of quality or competency of available Tradesmen. (76.0%) submit that the shortage is predominant with masonry and plumbing Trades while (72.0%) opine that the labour shortage is predominant with wood Trades. It is evident from the above analysis that there is currently a shortage problem in Nigerian construction sector, the shortages cut across the various trades and both in terms of quality and quantity.

Table 4: Causes of labour shortage

Opinion	Responses					Total
		Strongly Agreed	Agreed	Disagree	Strongly Disagreed	
<i>The labour shortage (if any) could be alluded to: a] sub-standard or defective training methods</i>	<i>Frequency</i>	10	7	4	0	21
	%	47	33	19	0	10 0
<i>b] lack of adequate facilities for apprenticeship training</i>	<i>Frequency</i>	15	6	0	0	21
	%	71	29	0	0	10 0
<i>c] absence of or obsolescence of training</i>	<i>Frequency</i>	15	5	1	0	21

<i>facilities in technical/vocational institutions</i>	%	71	24	5	0	10 0
<i>d] lack of encouragement or incentive for youth to acquire technical skill</i>	Frequency	15	6	0	0	21
	%	71	29	0	0	10 0
<i>e] absence of practical in training curriculum in technical colleges</i>	Frequency	4	7	9	1	21
	%	19	33	43	5	1.0 0
<i>f] abandonment of age old method of apprenticeship training</i>	Frequency	6	7	7	1	21
	%	29	33	33	5	10 0
<i>g] wrong choice of training/instructional methods by Trainers</i>	Frequency	0	8	13	0	21
	%	0	38	62	0	10 0
<i>h] unwillingness on the part of Trainees to acquire in-depth knowledge/skill in the chosen trade</i>	Frequency	9	7	4	1	21
	%	43	33	19	5	10 0
<i>i] present economic downturn with the attendant job scarcity</i>	Frequency	4	5	10	2	21
	%	19	24	48	9	10 0

A total of (80.0%) is of the opinion that the labour shortage could be alluded to sub-standard or defective training methods. All the participants agreed that the labour shortage is due to lack of adequate facilities for apprenticeship training. (95.0%) blamed the labour shortage on absence or obsolescence of training facilities in technical/vocational institutions. All the respondents said that lack of encouragement or incentive for youth to acquire technical skill is the root cause of labour shortage in the nation's construction industry. A total of (52.0%) blamed the labour shortage on absence of practical work in the training curriculum of technical colleges, (62.0%) agreed that abandonment of the age-old method of apprenticeship training is responsible for the labour shortage. (76.0%) identified the unwilling attitudes of vocational trainees to acquire in-depth skill knowledge as the reason for the labour shortage; while (38.0%) and (43.0%) supported wrong instructional method and present economic downturn respectively as the cause of the present labour shortage being experienced by the construction industry in the country.

Submission of the survey participants reveals that the recent economic downturn is not a major cause of the labour shortage being experienced in the construction sector, the instructional method seems also adequate and the curriculum content not so much of a problem. The real problem is the lack of adequate tools and equipment to facilitate the impartation of necessary skills in the cause of training and preparing trainees for the world of work. Thus, the graduates of the vocational institutes lack competence to demonstrate quality craftsmanship after graduation.

Table 5: Rating of Nigerian craftsmen vocational education and training

Opinion	Responses	Strongly Agreed	Agreed	Disagree	Strongly Disagree	Total
<i>The present state of vocational education and training in Nigeria can be rated as:</i> <i>a) producing the needed competent and confident workforce for the construction industry</i>	<i>Frequency</i>	1	5	10	5	21
	<i>%</i>	5	24	48	24	100
<i>b) not producing the needed competent and confident workforce for the nation's construction industry</i>	<i>Frequency</i>	14	2	5	0	21
	<i>%</i>	67	9	24	0	100
<i>c) below acceptable standard</i>	<i>Frequency</i>	12	6	2	1	21
	<i>%</i>	57	29	9	5	100
<i>d) adequate</i>	<i>Frequency</i>	4	3	7	7	21
	<i>%</i>	19	14	33	33	100
<i>e) in-adequate</i>	<i>Frequency</i>	12	6	2	1	21
	<i>%</i>	57	29	9	5	100

The greater percentage of the survey participants (72.0%) disagreed with the postulation that the present state of vocational education is producing needed competent and confident workforce and a total of (74.0%) rated the nation's vocational education as not producing the needed workforce. (86.0%) submit that the present vocational education state is below acceptable standard and in-adequate.

The postulations made in Table 6 are designed to clarify what could be responsible for the present poor state of vocational education and training. A total of (76.0%) agreed that reduced emphasis on apprenticeship training is responsible for the present state which has been rated in Table 5 as inadequate in producing the required workforce. All the respondents identified poor funding, and government's lack of commitment or paying of 'lip-serve' to vocational training. (95.0%) view abandonment or truncation of past policies and lack of a workable and effective framework for the training of tradesmen. A greater percentage of the respondent identified lack of training facilities and non-participation of construction industry's organized private sector in training, and sordid implementation of vocational/technical education policies.

Table 6: Reasons for the present state of vocational and technical education

Opinion	Responses	Strongly Agreed	Agreed	Disagree	Strongly Disagree	Total
<i>The present state of vocational and technical education can be blamed</i>	<i>Frequency</i>	9	7	3	2	21

<i>on:</i>	%	43	33	14	9	100
<i>a) reduced emphasis on apprenticeship training method</i>	Frequency	19	2	0	0	21
	%	90	10	0	0	100
<i>b) poor funding of technical and vocational education</i>	Frequency	12	8	1	0	21
	%	57	38	5	0	100
<i>c) abandonment and/or truncation of past vocational and technical education policies</i>	Frequency	13	7	1	0	21
	%	62	33	5	0	100
<i>d) lack of workable and effective framework for the training of tradesmen for construction industry</i>	Frequency	6	10	5	0	21
	%	29	48	24	0	100
<i>e) sub-standard or defective training methods</i>	Frequency	13	7	1	0	21
	%	61	33	5	0	100
<i>f) absence of or obsolescence of training facilities in technical/vocational institutions</i>	Frequency	3	6	9	3	21
	%	14	29	43	14	100
<i>g) wrong choice of training/instructional methods by Trainers</i>	Frequency	8	5	5	3	21
	%	38	24	24	14	100
<i>h) unwillingness on the part of Trainees to acquire in-depth knowledge/skill in the chosen trade</i>	Frequency	2	5	11	3	21
	%	9	24	52	14	100
<i>i) absence of practical instructions in training curriculum in technical colleges</i>	Frequency	15	3	3	0	21
	%	71	14	14	0	100
<i>j) non-participation of construction industry's organized private sector in training of craftsmen</i>	Frequency	16	5	0	0	21
	%	76	24	0	0	100
<i>k) lack of commitment to technical and vocational education on the part of the government</i>	Frequency	7	7	5	2	21
	%	33	33	24	9	100
<i>l) defective and inadequate curriculum</i>	Frequency	17	3	1	0	21
	%	81	14	5	0	100
<i>m) inadequate funding of vocational/technical education and training</i>	Frequency	12	7	2	0	21
	%	57	33	9	0	100
<i>n) non participation of private sector in training of craftsmen</i>	Frequency	13	5	3	0	21
	%	62	24	14	0	100
<i>o) inadequate involvement of organized private sectors in vocational/technical education and training</i>	Frequency	7	6	8	0	21
	%	33	29	38	0	100
<i>p) inadequate policy formulation with respect to vocational education and training</i>	Frequency	14	5	2	0	21
	%	67	24	9	0	100
<i>q) sordid implementation of vocational/technical education policies</i>	Frequency					
	%					

Findings from the analysis of opinions expressed in response to the open ended questions; on reasons why the younger generation seems not to show interest in skills acquisition in construction related trades revealed poor wages, lack of job security, poor rating of construction related skills and other vocational trades in relation to 'white collar' jobs, rough and hazardous nature of construction related trades, and lack of motivation from the nation's leadership, due to lack of encouragement for hard work and high level of corruption. The data elicited through the open ended questions also supported the idea that the shortcomings in the training of craftsmen is impinging negatively of the supply of competent workforce to the construction sector.

7. Discussion

Findings from the analysis of data collected for the study established the fact that there is presently a shortage of labour in the nation's construction industry and that the shortage is both qualitative and quantitative. The views expressed by the respondents agree with literature; on the factors responsible for the inability of the vocational training system to produce the required quality and quantity of skilled workforce needed for successful product delivery in the construction sector of the nation's economy. This revelation reinforces the fact that vocational training problems is impacting negatively on the supply of confident and competent skilled workforce in the construction sector.

The labour shortage cut across various trades. Vocational training is also found as not effective in producing the needed workforce to solve the labour shortage problems. The entire participants rated the present state of the Nigerian Technical and Vocational Education as incapable of producing the required quantity and quality of needed skilled manpower for the nation's construction industry; hence the need for a positive action in addressing the problems. If the present state of vocational training is rated as in-adequate and not producing the needed skilled workforce for the construction industry; then the current skilled labour shortage can be regarded as a reflexion or product of the shortcomings in vocational education and training.

Labour shortage problem could be linked with training problems which include defective training occasioned by inadequate facilities, inadequate funding, sordid implementation of Vocational training policies and defective curricular with too much emphasis on paper qualifications at the expense of skills acquisition. The opinions expressed by the participants agree with available literature (Olaitan 1996; Oranu 1998; Akindoyeni 2005; Odia and Omofonmwan 2007; Oni 2007).

Other identified problems of vocational training in the nation include inadequate participation of the organized private sector in vocational training, inadequate commitment of government at various levels to vocational education, abandonment of age old method of apprenticeship method amongst others. The youth generation are also not encouraged to take to skills acquisition training due to low wages paid to construction workers, lack of clear-cut career progression path, lack of encouragement from the nation's leadership in form of support for hard work and preference for well-paid white collar jobs at the expense of construction related skills. From the opinions elicited through the survey, the present economic downturn has not much link with labour shortage and if other identified problems

are tackled through the formulation of a 'best practice' framework; the approach to manpower training and development could be improved upon to produce effective results in tackling the labour shortage problem.

8. Conclusion

The findings from the study confirm the existence of labour shortage both in terms of quality and quantity. The shortage of skilled craftspeople in the construction sector in Nigeria could be linked with the problems facing the vocational and Technical Education system. It could therefore be concluded that the formulation of an 'all-encompassing' best practice framework that will address the identified skilled workforce training issues would be an indispensable antidote towards tackling the current difficulties.

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