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Construction Job Hazard Analysis Skills: A Panacea to Electoral Malpractices in Nigeria.

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Abstract
The article aims to propose the construction job hazard analysis skills: a panacea to electoral malpractices in Nigeria. The paper explored the following task breakdown skills, tools and equipment skills as well as control hierarchy skills as a panacea for electoral malpractices in Nigeria. Every nation regardless of the sector of the economy cannot exist without infrastructural development. Every civilization is dependent on their available infrastructure. Our construction/building industries of the nation are tasked with the provision of these infrastructural developments. Nigerian construction sites continue to have a devastating impact on the lives of workers, property, and project delivery duration. The result has been that construction workers are often unemployable or underemployed, some who are employed fall victims to accidents and fatalities due to incompetency. This necessitates immediate efforts to identify and investigate novel methods of promoting construction site safety. This challenge in our construction/building industry has motivated the employers to search for employees with CONSTRUCTION JOB HAZARD ANALYSIS SKILLS, to reduce liability and cut losses of varying magnitudes. The existing gap between traditional practices and Construction Job Hazard Analysis skills in the construction/building industry have made the demand for such skills that promote for effective safety practices and cost reduction to continue to be sought for. This paper therefore proposes the importance of construction job hazard analysis skills acquisition, which can give the Nigerian youths and citizens a better employment status, leaving them with employable skills, and this will engage them, reducing electoral malpractices in Nigeria.

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I. Introduction

Every nation, both the developed and the developing are focused and driven in sustaining and growing their national development, whether economically or industrially; the success of their national development is fully hinged on their various levels of infrastructural development.

Today's civilization in the western world and in Africa is primarily as a result of their different stages of infrastructural development and their respective pursuits for sustenance and self-preservation.

Regardless of the nation and its level of national development, no sector of the economy can exist without infrastructural development. Every type, form and stage of civilization is dependent on their available infrastructure. Whether it is the private or public sectors, private or public organizations and institutions, they must exist in a location and function in a constructed facility or building and systems.

Infrastructure improves the quality of life by providing consumption goods (transportation, energy, and communication systems) and contributing to economic stability.

Infrastructures are the fundamental facilities and services that must be established in order for development to occur. It facilitates and accelerates economic development, whereas economic development and growth would be difficult to achieve in the absence of infrastructure (Nedozi et al, 2014). Infrastructural development are Power supplies, potable water supplies, access to quality healthcare facilities, good roads and public transportation, telecommunications, suitable educational institutions, suitable recreation facilities, a sanitary environment, and so on are examples. However, infrastructure in itself is but a concept without the actual construction and fabrication processes needed to make its development possible. The construction/building industries of the nation are tasked with the provision of these infrastructural developments needed for national development and they undergo a challenging operation of ensuring they meet project deadlines, provide adequate facilities (private and public) for the nation and meet all the housing demands of its citizens. This demanding task placed on the construction/building industries has further increased their operational activities and in turn made them to be the industry with highest accident and mortality rates globally.

Recurring occupational health and safety challenges in the Nigerian construction industry are on the rise, resulting in various types of loss of varying magnitude (Akinwale & Olusanya, 2016).

A number of studies have found that construction accidents and injuries are far more common and severe in developing countries such as Nigeria than in developed countries (Dodo, 2014).

According to Dodo (2014) the accidents on Nigerian construction sites continue to have a devastating impact on the lives of workers, property, project delivery times, and have also jeopardized the completion of projects within defined budgets and specifications. This necessitates immediate efforts to identify and investigate novel methods of promoting construction site safety.

This challenge in our construction/building industry has motivated the employers to search for employees with CONSTRUCTION JOB HAZARD ANALYSIS SKILLS, to reduce liability and cut losses of varying magnitudes. As employees with this skill set are less likely to cause incidents and accidents which in turn prospers project delivery, waste reductions, better public images, cost reduction etc.

Thus, the Occupational Safety and Health Administration (OSHA) recommends that artisans, technicians, technologists, and managers receive consistent training on Construction Job Hazard Analysis (CJHA) in order to ensure safety and productivity (Institution of Occupational Safety and Health (IOSH), 2015).

In this context, CJHA Skill training is intended to provide the building technology technician and technologist with a better understanding of effective and efficient health and safety policies and practices so that they can work safely and ensure that their actions and omissions do not harm them or others and no liability is incurred by their employers and be self-reliant.

Conceptual Analysis

Job Hazard Analysis (JHA)

JHA is an industry best practice method of identifying, assessing, and controlling hazards associated with a specific job. A JHA divides a job into tasks and evaluates each one to see if there is a better, safer way to do it. A job hazard analysis is effective for jobs with difficulty to control hazards as well as jobs with a history of accidents or near misses.

JHA's for complex jobs can take a long time and a lot of experience to develop. For such tasks, you might want to enlist the assistance of a competent, qualified and experienced safety professional.

Construction Job Hazard Analysis (CJHA)

Construction Job Hazard Analysis (CJHA) is simply JHA tailored to the construction/building industry operations, procedures and processes. It involves breaking down all the construction operations into simpler tasks and analyzing all potential risks, hazards, and controls needed to safely execute the required operation.

Skills

A skill is an ability to perform a productive task at certain level of competence. (Darren, Mark & Christopher, 2012) posit that as a skill is associated with a particular task, a person who does not possess such a skill is unlikely to be able to carry out such task or will be less productive than somebody who does possess this skill. They added that skills are often associated with a qualification and its acquisition through formal and informal training and on-the-job experience.

Construction Job Hazard Analysis Skills

Construction Job Hazard Analysis Skills are skillsets relating to the construction/building industry that prepare the building technology technician and technologist for effective and efficient health and safety policies and practices, that gives building technology technicians and technologists the competency and expertise to work safely, efficiently and effectively in the industry, making such an individual to be sought for by employers of the industry and be self-reliant.

Purpose of Paper

The incorporation of new technologies with new subsystems and system components into modern buildings have changed their designs and made their construction a more complex and dangerous task, even though some of the new systems make them easier to maintain (Omollo et al., 2017). The gaps between by traditional safety and Construction Job Hazard Analysis in the construction/building industry have made the demand for such skills that promote for effective safety practices in these new concepts/design of buildings to continue to be sought for by employers. The result has been that building technology technicians and technologists are often unemployable or underemployed, some who are employed fall victims to incidents, accidents and fatalities.

According to the DailyTrust Newspaper (2021), one person died and three others were injured in a construction site at the Woji axis in Port Harcourt.
Most of the scholars like Douglas and Adeloye, (2016), Okore, Chinedu and Udeh (2019), and Ilodeami, Achalu and Ekenedo (2021) identified several construction sites in Port Harcourt with health-related risks, injuries, accidents and ways of maintaining safety but no effort was made in analyzing these risks/hazards.
A number of studies have been conducted to determine the causes of accidents among building construction workers and solutions to them in order to protect the workers' lives and the work itself during work processes, but only a few have investigated the need for workers to have the necessary knowledge of construction job hazard analysis skills.

Construction activities in developing countries such as Pakistan, Ghana, and Nigeria are more labor intensive than in many developed countries (Al-Kilani, 2011), this means that accidents are more likely to happen in these areas. Furthermore, most construction firms in developing countries are not required to establish a management system that could improve site safety standards. This is exacerbated by a lack of government support for controlling and enforcing safety regulations on the job.

Thus, it was imperative to propose the construction CJHA skills approach with the view to identifying those that posed new challenges to the brick/block laying and concreting personnel in Nigeria. This article was therefore designed for the construction job hazard analysis skills: a panacea to electoral malpractices in Nigeria.

II. Review of related literatures

A Study of Safety Management in the Nigerian Construction Industry by Olutuase (2014) investigated the safety practices of construction companies in Jos, Nigeria, using key components of an effective safety management system. He selected 111 people at random from a population of 244 senior management and junior staff. He studied corporate safety leadership, risk management, safety training, operational control, and effective response as components. According to the findings of Olutuase's (2014) research, the level of safety commitment by a typical Nigerian construction company's senior and middle management is far below acceptable global standards.

Furthermore, Olutuase (2014) stated that the majority of Nigerian construction companies lack the ability to identify all conceivable risk factors and hazards prior to or during construction activities.

The Application of Health and Safety Plan in Nigeria Construction Firms by Dodo (2014), according to his study on the application of Health and Safety plans in Nigerian construction firms, the senior and middle management of most Nigerian construction firms hardly comply with any health and safety plans during construction.

Fatalities in the Nigerian Construction Industry: A Case of Poor Safety Culture by Agwu and Olele (2014), also supported that when undertaking projects in Nigeria, construction companies typically place safety at the bottom of the priority list. As a result, in most cases, workers and contractors disregard even the most basic safety rules and regulations.

Methods and Models in Process Safety and Risk Management: Past, Present and Future by Ahmad et al., (2015) Similarly, safety should focus on reducing workplace accidents and their negative impact on workers in general. Adoption and compliance with health and safety provisions served as a catalyst in optimizing the construction production process, according to safety management in construction projects.

More accidents will result in pains, accidents, and legal actions if health and safety practices are not followed, escalating production costs (Idubor & Oisamoje 2013; Dodo, 2014; & Umeokafor et al., 2014).

Sources of Accidents on the Construction Site

There are numerous causes of accidents on any construction site, but for the purposes of this paper, we will focus on the following: poor housekeeping, workers' inability to adapt to safety practices as opposed to traditional practices, horseplay, poor safety communication between management, supervisors, and workers, lack of adequate training/retraining of workers, poor safety supervision from managers and supervisors on site, workers' traditional/religious beliefs, employment of inexperienced or incompetent workers, workers' disregard for safety rules and regulations, reactive decisions against proactive decisions, poor quality PPE, workers actions that put other workers at harm's way.

All of the above-mentioned factors are areas to improve and adhere to in order to promote best construction site practices in addressing the challenges confronting the construction/building industry in Rivers State. This is consistent with the findings of Idoro (2011), who emphasized the importance of construction companies providing adequate safety training on each project in order to reduce accidents and promote sustainable development.

For the purpose of this paper, we shall be focusing on the *Construction Job Hazard Analysis Skills* needed by the building technologist and building technician, that gives building technology technicians and technologists the competency and expertise to work safely, efficiently and effectively in the industry, making such an individual to be self-reliant and sought for by employers of the industry. This is consistent with Dodo, (2014) who noted that trained workers will comply to safety and maintain safety practices on sites and reduce project costs and possible litigations.

Classification of Construction Job Hazard Analysis Skills

1. Task Breakdown Skills:

This is a skill that aids in the incorporation of accepted occupational safety and health principles and practices into a specific task or job operation.

It enables the building technologist and building technician to focus on accident prevention, by understanding an assigned task, identify all the steps or activities entailed in undertaking that particular task, and be able to by cross reference all the steps or activities required to achieve the completion of that task, with all of its corresponding risks, hazards, tools and equipment and controls.

This skill is viewed as a planning tool, ensuring that all risks and controls for your job are identified and appropriately managed.

2. Tools and Equipment Skills:

This skill aids the building technologist and building technician in selecting the appropriate tools and equipment for a particular task by considering the following parameters; ergonomic requirements, workers psychological/physical abilities, task conditions, safe tools/equipment operation span, environmental conditions, anthropometric requirements, safety rules/regulations of operation, exposure span, task duration, lock out and tag out (LOTO), safety and warning control systems, right tools/equipment and alternatives, bad/faulty tools and equipment, checklist and inspections/repairs.

Ismail, et al,. (2012) asserted that workers' knowledge of how to use the appropriate PPE with the right tools/equipment would reduce accidents on the construction job site.

However, employers must ensure that all tools and equipment provided to workers and employees for use is safe and does not pose a long-term health risk to its users. They must also ensure that the workers who use such equipment are skilled and competent to do the job safely.

3. Control Hierarchy Skills:

According to the National Institute for Occupational Safety and Health (NIOSH), 2022 there are five (5) levels of controls, as measures to mitigate against hazards and their exposure at the work place on site.

The control hierarchy skill enables the building technologist and building technician to employ the right control measure based on the level/type of hazards encountered at the construction site. The knowledge of this skill is vital as it is the only line between life and death of a worker, the inability to use the right control could be expensive, catastrophic and have fatal consequences.

The selection of the best control hierarchy is dependent on the expertise of the building technologists' and building technicians' TASK BREAKDOWN AND TOOLS AND EQUIPMENT SKILLS, as they will serve as the foundation to choose the right control based on the task to be completed, the right tool and equipment and their corresponding risks and hazards.

Control Hierarchy Skill is the ability of the building technologist and building technician to competently employ the best control measure for a given task or process, that will adequately protect the worker, tools and equipment and the environment while the given task is being undertaken.

There are five (5) hierarchy of control;

ELIMINATION CONTROL – Physically remove the hazard.

SUBSTITUTION CONTROL – Substitute the hazard with a safer alternative.

ENGINEERING CONTROL – Isolate people from the hazard.

ADMINISTRATIVE CONTROL – Develop laws, policies, regulations, and change how workers work.

PERSONAL PROTECTIVE EQUIPMENT – Protect all workers exposed to hazards.

It is critical to note that the goal at the top of the hierarchy is to control the source of the hazard, whereas the goal at the bottom is to protect the worker and/or others from potential harm.

Without a doubt, skills acquisition is an effective means of eradicating youth unemployment, restlessness, negative youth-related inclinations and electoral malpractices in our country (Omotosho, 2017). In order words, construction job hazard analysis skills acquisition is the panacea to comb the menace of electoral malpractices in Nigeria.

III. Summary and Conclusion

Reducing and curing electoral malpractice and unemployment has not been an easy fit for both the government and private sectors. The acquisition of skills appears to be the only and sustainable way to address this issue, and it is the responsibility of our government and private bodies to promote the acquisition of construction job hazard analysis skills in order to engage graduates of our technical institutions in acquiring these skills, which would alleviate their unemployment status and involvement in electoral malpractice and mayhem in Nigeria.

This paper proposes the importance of skill acquisition, specifically, the construction job hazard analysis skills acquisition, which can give the building technologist and building technician, youths and citizens a better employment status, leaving them with employable skills, some might startup their own business, and this will engage them reducing and curbing electoral malpractices in Nigeria.

Recommendations

1. As measures to keep education and training in tune with the knowledge and skills needed in the world of work, school courses and curricula must be reviewed, enriched and updated regularly in line with occupational health and safety improvements that are taking place in the industries.
2. Most construction firms in developing countries like Nigeria are not mandated to establish a safety management system that could improve site safety standards. Therefore, laws and regulations should be always be strictly implemented by bodies and agencies responsible with regularizing activities of occupational safety and health in the construction industries.

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