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SYNDICATE TRAINING METHOD FOR SAFETY COMPETENCIES OF WORKERS IN OYO STATE

By

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Abstract

Safety trainings have been observed not to bring desired reduction of accidents rates nor improved safety competencies of workers in the construction industry. It is of major concern if this could be as a result of the wrong methodology used in executing these safety trainings. The paper determined the effects of syndicate training method (STM) on occupational health and safety competencies of workers in the construction industry in Oyo State, Nigeria. It adopted the pretest-posttest, control group quasi experimental design. Purposive sampling technique was employed in selecting three reputable construction organisations in Oyo State. The workers in the two organizations who met the study's inclusion criteria were randomised into STM, (12) and Lecture method (12) (Control) groups while treatment lasted eight weeks. Construction Industry Occupational Health and Safety Competencies Questionnaire ($r= 0.85$) and Occupational Health and Safety Competencies Scale ($r=0.78$) were used in collecting data for the study. Data analysis was done using ANCOVA at 0.05 level of significance. There was a significant main effect of treatment on occupational health and safety competencies of construction workers ($F_{(1, 19)} = .225, P < 0.05, \eta^2 = .029$). The syndicate training method improved the occupational health and safety competencies of the construction workers. Therefore, the training method should be employed regularly in safety trainings to achieve improved occupational health and safety competencies workers.

Keywords: Occupational health and safety competencies, syndicate training method

Introduction

Construction industry is prone to high incidences of fatalities. The fact that employees' physical and psychological health is affected by the work environment in the construction industry has been significantly documented in the literature (Vander and Maes, 1999; Ariens, 2001; Bongers, 2002, Stansfeld and Candy, 2006, Way and Mac Neil, 2006). The construction workers are constantly exposed to risks that differ from other industries. The construction industry is one of the most hazardous industries worldwide and typically ranks highest in terms of the total number of work-related fatalities each year (Bindra and Rinehart, 2008). Construction work is difficult, often involving manual handling of heavy materials and equipment, and also dangerous, as it includes having to climb high scaffolds or taking risky physical activities (Kester, 2013). Data are not readily available on the actual magnitude of hazards on construction sites in Nigeria because most of the construction workers are employed on contract basis. But it is estimated that one fatal accident occurs in the building and construction sector every ten minutes globally (Quaino, 2013). At least, 108,000 workers are killed in construction sites every year and workers die more while working on construction sites than in any other industry (Kester, 2013).

The employment status of the construction workers may be of importance to the occupational health and safety competencies of the construction workers. This case may even be worsened by the fact that most of these construction workers are hired by the main contractors as casual, contract or temporary workers who may be laid off at any given time because of the absence of formal contractual agreement. Sustainance of injury by these set of workers would not attract payment of any liability on the part of the employers because they seem

not to have any viable grounds to stand on with regard to legislation and it is very easy for such employers to replace them.

There is therefore a need to prevent such harms, hazards and danger with a view to ensuring safety at all times and in all places for the construction workers. The occupational health and safety in the construction industry is an issue of major concern to all stakeholders. Occupational health and safety centre on the prevention of incidence and occurrence of occupational diseases, injuries, hazards as well as fostering a safe and healthy workplace. It dwells mainly on protecting the safety, health and welfare of people engaged in work or employment. Occupational health and safety is very essential in any organisation because it relates to the safety of every individual within and without the organisation. For the workers to be highly productive, effective and efficient in the course of performing their jobs, certain minimum safety conditions need to be put in place to motivate and encourage them to work optimally. Some of these include good and safe working condition and environment as well as good remuneration.

The workers also need to be involved in the process of ensuring safety at work and the prevention of occupational accidents, injuries and hazards. They, therefore, need to be well informed and adequately equipped with all the necessary protective equipment so as to reduce workplace accidents within the industry to the barest minimum. In this process, the construction workers will imbibe a good occupational health and safety competencies; having a good sense of compliance and adherence with safety rules and regulations, taking appropriate measures for the continuous prevention of hazards and risks at the workplace (Ojo, 2016).

The occupational health and safety competencies of workers refer to a high level of awareness of the need for safety at all times, identification and prevention of existing potential hazards, inculcation of safety skills in terms of personal protective equipment's usage and having the right attitude towards the establishment, execution and maintenance of safety culture at the workplace. The workers need provision of constant safety training all year round.

The importance of safety training, awareness and enlightenment cannot be ignored in a bid to ensure a safe workplace and encourage occupational safety and health competencies among both workers and employers in the construction industry. The establishment and effective implementation of occupational health and safety system in any organisation in the construction industry will centre on driving the various safety tips, rules and preventive measures through skill capacity building as well as continuous training programmes for the workers and every stakeholder at the workplace. However, the success of this, largely depends on the instructional methods, which are employed in delivering safety information and this, to a large extent, will determine the effectiveness of the outcome of such safety training programmes.

Despite the high level of information and awareness on the importance of safety at work, there is still high prevalence of hazards, accidents and injuries in the Nigerian construction industry. Records have shown that at least one fatal accident occurs in every ten minutes globally (Quaino, 2013). This raises concern as to if the non-compliance with safety rules is as a result of the wrong use of instructional methodologies used in disseminating such safety rules. Ahmed and Newson-Smith (2010), identifies the following as some of the main reasons for not implementing workplace safety policy in most developing countries: lack of effective enforcement system, lack of information and accurate records of occupational diseases and accidents, and lack of basic professional training in occupational health and safety, which may lead to the use of inappropriate instructional methods in imparting safety instructions. There are numerous training methods which can be used in imparting knowledge, skills and attitudes particularly in a non-formal setting. Each of these training methods is more suitable in one learning environment than the other. While some methods are very useful in disseminating knowledge, some are more appropriate for inculcation of skills, while others are more beneficial for change of attitude.

One of the broad factors guiding the selection of methods is the focus of the intended learning programme. If the focus of learning is increasing knowledge, then the methods to be used may be lectures, field visits, demonstrations and self-study. If the focus of learning is to increase skills, the methods to be used are

more of practice sessions, demonstrations, apprenticeship and learning by doing; but if the focus of learning is to generate awareness, the methods used would be role-plays, small group discussion, case studies, simulation, learning games and structured exercises. Other considerations for the choice of training or instructional methods include: the nature and background of learners, the experience and knowledge base of learners, the learning environment, time, space, competence of facilitators and group size.

Given the nature of the construction industry and the peculiar characteristics of most of the construction workers, any planned safety programme will require an interactive instructional method that is group-based, pragmatic, experiential and of immediate usage. This raises the issue of whether the introduction of such training method, like syndicate will help to increase the occupational health and safety competencies of the workers, hence the paper.

Statement of the problem

High level of risks occurrence and hazards characterised construction work and industry, especially in Nigeria, although, it is highly important to the developmental processes of any nation. The workers are particularly exposed to the diverse hazards and injuries. Although safety trainings are sometimes organized for these workers to enhance their safety competencies, there is still high prevalence of accidents. One may wonder if the type of safety training method used for these workers is faulty and does not include pragmatic and andragogical techniques which can improve safety competencies of the construction workers who are basically adults. In view of the foregoing, this paper examined the effects of syndicate training method on occupational health and safety competencies of workers in construction industry in Oyo State, Nigeria. The moderating effect of employees' employment status was also determined.

Literature Review

Every individual in this life is exposed to risks at different degrees or grades, at home, workplace or in the place of worship. The events of bomb blasts in churches, falls at construction sites and home accidents are all pointers to the prevalence of risks and hazards in our environment. The presence of risks, hazards and danger at all levels predisposes people to harm and accident. Each type of occupation has its own risk, from the less obvious service industry to the more glaring risks in the factories, as well as manufacturing and construction industries.

Although risk is present everywhere, the injuries and accidents in the occupational setting constitute a serious concern and great burden. Occupational hazards could be described as the risks and harm arising out of the workplace situation. Workplace hazards, injuries and accidents have been of utmost concern worldwide. Injuries in the occupational domain constitute a significant burden in its own right. Over 300,000 workers die each year because of accidents and more than 250 million workers sustain injuries as a result of occupational accidents (Nishtar, 2008). More than half of these injuries require change of jobs, work restrictions or time away from jobs. There are outrageous records of the negative impacts of workplace hazards on workers internationally and even in Nigeria. However, globally quoted statistics tend to under-report injuries, due to lack of reliable information systems in the developing countries and these data do not capture the burden of occupational injuries borne by many disadvantaged workers in the informal employment sector.

Surgenor (2010) describes syndicate training as learning activities undertaken by a group of learners working to a brief under their own direction and for them to achieve productively; they will need an explicit brief, appropriate resources and clear outcomes. Syndicates can work in groups spread out in a large room; where facilities permit, they go away and use other rooms. The purist's view of small group teaching is that it must be learner-centred, with all students joining in free discussion of a particular topic (McCrorie, 2006). Small groups can also operate within a much larger setting, such as a lecture, workshop or conference. Small-group teaching is necessarily more demanding of staff and room resources and time than lectures. However, well-designed small-group teaching has clear benefits for learners in terms of retention of information, critical thinking and consolidation of learning from different parts of a programme (McCrorie, 2006). The dental

undergraduates of Glasgow University, United Kingdom, were very positive about the effects of the syndicate group approach in terms of making them work harder through a sense of group responsibility.

Although the issue of occupational health and safety is not new, previous studies have focused attention more on how to reduce the risks and hazards with less attention paid to the use of such methods as syndicate training method. Such studies include: Perceived influence of health education on occupational health of factory workers in Lagos State (Bankole and Lawal, 2012) Risk assessment of common construction hazards among different countries (Zolfagharian, Irizarry and Nourbakhsh, 2011); Comparing occupational health and safety (OHS) management efforts and performance of Nigerian construction contractors (Idoro, 2011) the Relationship between psychosocial work factors, employee health and organisational production (Karlsson, Bjorklund and Jensen, 2012), Occupational health and safety: Issues, challenges and compensation in Nigeria (Kalejaiye, 2013), Exploration study of the cost of health and safety performance of building contractors in the South-East, (Okoye and Okolie, 2014).

Hypothesis

Ho₁: There is no significant main effect of syndicate training methods (treatment) on occupational health and safety competencies of workers in the construction industry

Ho₂: There is no significant main effect of employment status on occupational health and safety competencies.

Ho₃: There is no significant two-way interactive effect of treatment and employment status on occupational health and safety competencies of workers.

Methodology

The study adopted a pretest-posttest control group quasi experimental design. The experimental groups were exposed to syndicate training methods while the control group was exposed to lecture method. The population of the study comprised all the construction workers in Oyo State. The purposive sampling technique was employed in selecting two reputable construction organisations in Oyo State because of their size, high level of patronage and exposure of their workers to homogenous hazards. The workers in the two organizations who met the study's inclusion criteria were randomised into STM, (12-Adold Engineering Development Company Limited), and Lecture method (12-Ciroco Nigeria Limited) (Control) groups making a total number of 24 participants (80% male and 20% female with a mean age of 34 years). The inclusion criteria for the study were:

- i. Participants who were construction workers actively engaged by the construction organisation at the time of carrying out the research.
- ii. Participants who showed willingness and readiness to take part in all the activities and processes of training throughout the period of the research without any force.

The main instruments used were Construction Industry Occupational Health and Safety Questionnaire, Occupational Health and Safety Competencies Scale, and Syndicate Training Method (STM). These were subjected to pilot test using a sample of twenty respondents of construction workers in Ijebu-Ode, Ogun State, Nigeria to validate the instruments. The reliability co-efficient obtained were 0.85 and 0.78 for the two scales respectively. Data were analysed using ANCOVA and Scheffe post hoc tested at 0.05 level of significance

Results

Ho₁: There is no significant main effect of syndicate training methods (treatment) on occupational health and safety competencies of workers in the construction industry

Table 1: Summary of 2x2 Analysis of Covariance on participants' Occupational Health and Safety Competencies and Control Group

Source	Type III Sum of squares	Df	Mean Square	F	Sig	Partial Eta Squared	Remark
Corrected Model	49.832 ^a	4	49.832	.204	.933	.094	

Intercept	813.680	1	813.680	13.333	.002	.407	
Pretest	15.663	1	15.663	.257	.001	.013	
Treatment	13.753	1	13.753	.225	.010	.029	S
Error	1159.501	19	61.026				
Total	69050.000	24					
Corrected Total	1209.333	23					

R Squared= .094 (Adjusted R Squared = .097)

Source: Author

Table 2: Scheffe Post-hoc Pairwise Analysis showing the significant differences among treatment group and the control group on occupational health and safety competencies

Treatments	N	Subset for alpha = 0.05
Syndicate	12	52.926
Control	12	53.262
Sig.		.031

Source: Author

The table above showed the effect of treatment on occupational health and safety competencies among construction workers and the result showed that there was significant main effect of treatment on occupational health and safety competencies among the participant ($F_{(1, 19)} = .225, P < 0.05, \eta^2 = .029$). This means that there was significant difference in the mean scores of the occupational health and safety competencies of the participants exposed to treatment when compared with the control group, hence, hypothesis one is hereby rejected. The result further showed the effectiveness of the treatment by using Scheffe Post-Hoc analysis and it revealed that Syndicate method ($\bar{x} = 52.926$) is more effective than control group ($\bar{x} = 53.262$).

Discussion

The syndicate training method, as shown by this study, is very effective in training construction workers who are adults and also in the achievement of improved occupational health and safety competencies of the workers. This is because syndicate training entails small group decision, which allows participants to share their experiences and also have immediate practice of the acquired knowledge and skills. McKimm and Jollie (2007) submit that small group teaching is very relevant to adult learners because learning in a small group facilitates learning through discussion, active participation, feedback and reflection. The syndicate training method can then be said to be relevant to training the construction workers who are basically adults, as shown by the finding.

This finding established the fact that appropriate methods of training are very important if there will be continuous improvement in the occupational health and safety competencies of construction workers. Safety training need to incorporate the use of relevant methods, like syndicate method. The syndicate training method is one of the methods that mainly draw from the experience of the participants and could be referred to as one of the techniques of experience-based learning. It will be useful for improving the occupational health and safety competencies of workers because it draws from their experience to help in the process of inculcating safety values and attitude. Attitude change in construction workers will be achieved with the use of safety training which is based on the experiences of the participants. Andreson, Boud and Cohen (1996), state that "attitude and value change is liable to be promoted if authentic experience is used to define and raise awareness of attitudes and values not previously recognised by the holder."

This is also supported the by the findings of Mckerlie, Cameron, Sherriff and Bovill (2012) in a study carried out on students' perceptions of syndicate group learning. The results demonstrated that syndicate learning helped students to achieve course objectives. However, the study showed that tutor-less groups were rated more positively by students in comparison to more traditional group work with a tutor/facilitator as well as to other teaching methods, such as lectures. Outcomes such as enhanced student motivation, engagement, interaction and enjoyment were encouraging. The students in that study were very positive about the effects of the syndicate group approach in terms of making them work harder through a sense of group responsibility. They also reported learning more deeply by having to teach their peers and learn from their peers. Vidya (2015), in his study argues that the method offers various intellectual benefits for students, like problem definition and

identification, data gathering and interpretation, problem-solving and critical analysis, proposition of management plan, group leadership and communication skills, incorporation of social and ethical aspects of medicine and promotes metacognition. These outcomes also supported the fact that syndicate learning groups can offer a valuable contribution to enhancement of occupational health and safety competencies as established by the finding of this study.

The importance of group based training which hinges on group collaborations, as shown in the syndicate training method for change of behaviour, especially that of inculcation of safety skills and imbibing safety attitude was also established in the study carried out by Navidian, Rostami and Rozbehani (2015). The work was on the effect of motivational group interviewing-based safety education on workers' safety behaviours in glass manufacturing. They found that the mean changes in the scores of awareness, attitude, and use of personal protective equipment among workers who underwent motivational group interviewing were significantly greater than those of control workers who underwent traditional educational sessions. It was, then, concluded that incorporation of motivational group-interviewing principles into safety education programmes had the positive effect of enhancing workers' knowledge, attitude, and, particularly, implementation of safe behaviours.

However, with the syndicate method, it is possible to experience dominance of a particular individual who could be the vocal one. This means that the effectiveness of the method could be because of this dominant figure. The expertise of the facilitator comes into play here. Facilitation should discourage dominance by a person.

Ho2: There is no significant main effect of employment status on occupational health and safety competencies.

Table 3 Analysis of Covariance (ANCOVA) showing the significant main effect of employment status on occupational health and safety competencies

Source	Type III Sum of squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Remark
Corrected Model	49.832 ^a	4	12.458	.204	.933	.094	
Intercept	813.680	1	813.680	13.333	.002	.407	
Pretest	15.663	1	15.663	.257	.001	.013	
Employment	7.259	1	7.259	.119	.044	.034	S
Error	1159.501	19	61.026				
Total	69050.000	24					
Corrected Total	1209.333	23					

R Squared = .094 (Adjusted R Squared = .097)

Source: Author

Also, result showed that there was significant main effect of employment status on occupational health and safety competencies among participants ($F_{(1, 19)} = .119, p < 0.05, \eta^2 = .034$), the hypothesis is therefore rejected and conclude that the main effect of employment status has positive significant main effect on occupational health and safety competencies among the participants. This implies that workers with permanent employment status have higher occupational health and safety competencies than their counterparts with temporary employment status.

The findings established that there was a significant difference between the occupational health and safety competencies of permanent and temporary workers where most of these workers were usually temporary workers and were more exposed to a lot of hazards and unfair practices. Alli (2008), describes the disadvantaged position of part-time, migrant and informal workers, commenting that they are another group that may suffer from not being covered by safety and health provisions. Bindra and Rinehart, (2008) also discuss the extensive turnover of mostly migrant labourers who are vulnerable to exploitation, language barriers and no social security as part of the issues of great concern in the occupational health and safety of construction workers. Karlsson, Bjorklund and Jensen (2012), state that downsizing, outsourcing, short-term contracts, job insecurity and less

stable work environment are a result of major changes in the labour market, which could also be a possible explanation for increased stress among employees and increased level of sickness absence in Sweden. (Cooper, 1999; Harenstram, 2005).

The difference in the post-test results of the permanent workers might be as a result of their advantageous position of having more access to safety training than the temporary workers. This is supported by the report of Belin, Zamparutti, Tull, Hernandez, Brussel and Gravelin (2011), that temporary workers have less access to training or to advantages such as bonuses or promotions and are less likely to be unionized, which can lead to a lower level of social and occupational safety and health protection than permanent workers experience.

Ho3: There is no significant two-way interactive effect of treatment and employment status on occupational health and safety competencies of workers.

Table 5: Analysis of covariance showing the significant two-way interaction effect of treatment and employment status on safety competencies of workers

Source	Type III Sum of squares	Df	Mean Square	F	Sig	Partial Eta Squared	Remark
Corrected Model	49.832 ^a	4	49.832	.204	.933	.094	
Intercept	813.680	1	813.680	13.333	.002	.407	
Pretest	15.663	1	15.663	.257	.001	.013	
Treatment*employment	16.958	1	16.958	.278	.004	.005	S
Error	1159.501	19	61.026				
Total	6905.000	24					
Corrected Total	1209.333	23					

R Squared = .094 (Adjusted R Squared = .097)

Moreover, result revealed that there was significant interaction effect of treatment and employment status on occupational health and safety competencies among participants ($F_{(1, 17)} = .278, p < 0.05, \eta^2 = 0.005$), the hypothesis is therefore rejected and conclude that the interaction effect of treatment and employment status has positive significant interaction effect in occupational health and safety competencies among the participants in which permanent employment status benefited mostly in the treatment.

This demonstrates that employment status significantly moderate the efficiency of the treatment in enhancing workers' occupational health and safety competencies. This indicated that, permanent workers responded positively to the safety training than those who are temporary workers. The treatments improved the occupational health and safety competencies of the participants regardless of whether they were temporary or permanent workers. This suggests that the use of syndicate method can be recommended for both temporary and permanent workers for improved occupational health and safety competencies.

It is important to expose both the temporary and permanent workers to periodic safety training using appropriate methods, like syndicate method since both categories of workers benefited from these methods regardless of their employment status. Employers of labour must then deviate from their nonchalant attitude shown towards training of temporary workers, as shown in the literature. One of the Managing Director of the construction industry stated categorically that he did not really care about the training of the sub-contractors and temporary workers because he believed that they might not have a positive attitude towards safety at workplace. However, this study confirmed that the use of learner-centred and pragmatic methods, like syndicate method will change the attitude of both temporary and permanent workers. The reaction of this manager was also emphasized by Quinlan and Bohle (2004) who observe that the use of temporary workers affect employers' attitudes to induction, training, participation in workplace committees and other implications for safety.

Conclusion

Safety training has been established in literature as a panacea for the reduction of fatalities. Although, construction workers are exposed to safety training and measures, there are still evidences and records of fatalities. It is clear that the success of the safety training largely depends on the instructional methods employed in the inculcation of the contents of these safety training, particularly interactive methods like syndicate and

guided-practice training methods. The study therefore showed that syndicate training method is effective in enhancing the occupational health and safety competencies of workers in the construction industry in Oyo States. There is therefore a need for more practice-oriented methods of training if there will be improvement in the occupational health and safety competencies of construction workers with the aim of reducing the prevalence of industrial accidents.

Recommendations

The following recommendations are made, based on the findings of this study:

There is the need to regularly incorporate the use of syndicate training method in the process of enhancing occupational health and safety competencies of construction workers. This will, in the long run, help in reducing the high prevalence of workplace accidents and ill-health in the construction industry. Therefore, training agencies, unions and development partners, like the International Labour Organisation (ILO), who are actively involved in safety training of workers should ensure the use of the method to achieve effective safety training outcomes.

Experience-based learning and group collaborations with a lot of demonstrations, as found in the syndicate training method should form the bedrock of safety training and should be factored into any process targeted at improving occupational health and safety competencies of workers. Deliberate efforts have to be made in ensuring that participants of training programmes on safety are formed into groups. In these groups, active participation should be encouraged while checking abuses of monopolizing discussions by individuals or facilitators. The effectiveness of syndicate groups remains the creation of open and free atmosphere for discussion.

The use of the syndicate training method should also be adopted in the process of training workers in other high-risk sectors, such as mining, manufacturing, and even the service industries, like banking, insurance and academics where the risks are perceived to be minimal.

The government should make it a policy, which must be duly enforced by the Federal Ministry of Labour and Productivity, that the expatriates and indigenous construction engineers who own the industries cater appropriately for their permanent and temporary workers, especially on the issue of occupational health and safety, without any prejudice to those workers who are employed by sub-contractors as temporary workers.

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