MANAGEMENT OF TECHNOLOGICAL DEVELOPMENT THROUGH MANPOWER TRAINING IN NIGERIAN INDUSTRIES

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ABSTRACT

The focus of this study was on the way or the manner technological development is managed through manpower training in Nigerian industries. The study was carried out through descriptive survey on operating industries in the Niger Delta region of Nigeria, using questionnaires to collect relevant data from 20 managers and 20 subordinate bodies from four industries in Delta, Edo, Bayelsa and Rivers State. The findings of the study revealed that modern industries came out by transfer of management technology through various manpower training and education programmes they expose managers to the purpose of the industry functions and most Nigerian managers acquired such required skills and education in improving job performance through training and education programmes as well as acquired the required technological skills and knowledge and relate well with their subordinates. Base on the findings, management of industries should pay priority attention to manpower training on technological development at regular basis and government should also monitor the regularity and quality training programmes for industrial manpower technology at regular basis among others.

Keywords: *Technology, technological development, technology transfer, technological advancement*

INTRODUCTION

The continued growth in technological know-how world wide has led to more obsolete technologies and the need for industries to adopt new technologies. New structure and techniques would emerge due to technological changes; thereby giving rise to the need for training and development of personnel to understand such structures and technical changes and applications. Training and development schemes must focus attention on helping people become comfortable in the presence of change and to work effectively within organization characterized by technological operation. Industries operate in a dynamic and functional environment characterized by technological advancement Technological changes have far reaching effects on companies unless they are prepared and able to move with times, and eroded their opportunities for growth curtailed. Kennedy and Donnell (1972) has therefore argued that it should be appreciated that modern technology has an imprint on management

technologies, human resources management training and development schemes. Technological transfer has been taken to be the advancement of technology. This is because a retardation of technological advancement would lead to the destruction of any society (Popoola and Nassar (1985). Such advancement takes form of new methods of producing existing products, the development of new substitutes and new design.

Okwandu (1985) opined that the process of development of innovation and change. National development is crucially dependent on technological advances, which is depend on training and development of human resources. Since education and training are product of technological innovation and change, and effective training objective should be aimed at enhancing the development of technology. The need for successful implementation of technology has been highlighted. The idea of technology is envisaged as the key to development and economic growth of any particular nation. Training and development facilitates technological growth, technological growth facilitates economic development. In this study, the aim is to find out how well some selected technology based organization have articulated their training development programmes to technological change requirement. It also intends to examine the nature of technology employed over time and technological transfer which has occurred between 1970 and 1988.

Training and development should be viewed as a tool for enhancing the effective management of technological change. It is obvious that some organizations find it difficult to adjust to changes, especially when such changes are concerned with technological innovations. Truly speaking, technological changes have economic development and growth implications for industries in which they are effected and the nation at large, Thomas (1975), Okubayashi (1986). Thus, the need arises to ensure that technological transfer is successfully effected by carrying out effective training and development as an aid. Okigbo (1977) observes that Nigeria today stands very low in the world order of nations, with other less developed countries a technologically backward society. It is, therefore, logical to argue that manpower training and education should be linked with technology so as to reap the full economic benefits of technological advancement.

TECHNOLOGY

Technology according to Bennet (1978) as the state of knowledge, methods, procedures and technical operations used for producing goods and services and determining the nature of job or work performed. Drucker (1958) argued that technology is not about things, it is about work, understanding work to be done, the key to understand the tools to be used. In another sense, technology is the techniques and technical process which an organization uses to change input such as materials, knowledge, energy and capital into output such as product and services. Nwachukwu 1986 defines technology as particular machines and equipments employed in the production to the nature of raw materials worked on and the body of knowledge and

ideas which make possible the employment of such machine and equipment. Also, technology is a systematic or other application of scientific or other organized knowledge to political task - production or art of combining factors of production to produce goods and services in an economy. It may as well be regarded as society's pool of knowledge regarding that industrial arts, consisting of knowledge used by industry regarding the principles of physical and social phenomenon/knowledge in day to-day operation or production.

According to Popoola and Nassar (1985) technological development is the accumulation of basic understanding of the world around us and the application of such knowledge to the construction of a pool of ideas for the improvement of our living condition. Okubayashi (1986) opined that technological advancement contributes to economic growth and material welfare; therefore there is the need for an economy to improve its technological performance in the world market.

Scott and Mitchell (1976) classified technology into three areas to the degree of specifically:

- General technology, that is the information generally available to the firm such as general educational skills and textbook knowledge;
- System specific technology or information possessed by firm in manufacturing of a particular product or process;
- Firm specific technique or information on unique to the firm and not attributable to a single product or process and which is likely to be embodied in people.

Ayeni (1985) view technological development can facilitate the process of producing goods and services and by logical inference of the process of economic development. Hawthorne (1987) contended that technological development implies changes. There are few organization which are not affected by technological change or which do not increasingly utilize technology. Changes in organization structures mechanism have however tended to follow technological changes. Technological change stands as a principal change to stratification of the enterprises. Technological changes displaces people devaluate skills develops new skills modifies the relative prestige of occupations and reverse the norms of component units of the enterprise.

Yoder (1956), in the study of automation of pipe manufacturing concluded and recommended that as a managerial policy men in organizations should be trained and educated in everything about phases of change in technology.

According to Brewster (1980) training brings about change, hence it brings about technological change. Flippo (1980) has argued that planned development and training programmes will return values to the organization in terms of increased productivity and greater organizational stability and flexibility to adapt to changing external requirement. Springborn (1977) states: "it does little good to invest on computer; numerically controlled machines; tools or other sophisticated devices unless a skilled workforce is available to operate and maintain them. Training is of the most important management functions.

TECHNOLOGICAL ACQUISITION STRATEGIES

The most common ways proposed by developing countries as applied in business, for their technology acquisition strategy are:

a) Copy technology: This is a strategy to acquire technology by dismantling foreign made machines and equipment, studying the components, and making them locally, by imitation, in order to produce similar machines and equipment. Now, almost all commercial banks are using online system of operation by copy technology;

b) Technology Transfer: This arrangement suggests that one party or country or business firm is willing to transfer its technology to another party, country or company. This "transfer" parlance has been frequently used when contracts or joint venture agreements are signed between technologically advanced countries or large countries or firms and companies and under developed countries or small scale firm. Such agreement often provides that some personnel of the disadvantaged and paying partner would be trained on the technology of the plant offered during its design, construction and installation.

c) Technology Cooperation: In this arrangement, the technology donor who is really willing to give out her technological knowledge expects appreciable political or economic benefits to accrue from transaction. For example, a developed country may assist a developing country or business to build a nuclear power plants because it wants to establish strong political allies or military bases in the area. Like other business investors from advanced countries can massively invest in industrial production in a developing country where there is cheap labour, highly trained manpower; good market and political and economic stability that will guarantee profitability.

It is, therefore seen that open door policy on Technological cooperation is a very good option for Technological acquisition.

d) Indigenous Technology: Such business firm or enterprise may apply appropriate technology as indigenous in nature that all Technologies take off from the same scientific principles and there is global standardization of technology that brings all technologies under one roof. Technology can take off internally through innovative and creative initiatives of such business firm from time to time.

METHODOLOGY

A descriptive survey method was employed in generating data for this study. The population of the study consisted both mangers and subordinate bodies from four industries operating in Delta, Edo, Bayelsa and Rivers States. The sampling technique used in this study was a simple random sampling method. A total of 20 managers and 20 subordinate bodies were selected randomly from four industries operating in the Niger Delta (ie selected especially from Delta, Edo, Bayelsa and Rivers States) which was closer to the researchers. The research instruments comprised a well

structured questionnaire with Likert model scales of Agree (A), strongly Agree (SA), Disagree (DA), strongly Disagree (SD) and Undecided (UD). The data were analysed using simple percentage in order to elucidate relevant data concerning technological development through manpower training and development programme in Nigeria industries.

RESULTS AND DISCUSSION

Table 1: Manpower training programme brings about technological change?

Distribution of percentages of responses

Variables	Frequency	Percentages (%)
Strongly Agree	16	40
Agree	12	30
Disagree	7	17.5
Strongly Disagree	3	7.5
Undecided	2	5
Total	40	100

Source: Survey, 2010.

The table above indicated clearly that that manpower training brings about technological change in industries. This finding support the earlier report of Brewster (1980) who stresses that training brings about change; hence it brings about technological change.

Table 2: Manpower training on technological development leads to increased productivity and greater flexibility to changing external requirements

Distribution of Percentages of Responses

Variables	Frequency	Percentages (%)
Strongly Agree	16	40
Agree	15	37.5
Disagree	3	7.5
Strongly Disagree	2	5
Undecided	4	10
Total	40	100

Source: Survey, 2010.

From the above table, greater proportion of the respondents strongly agreed that manpower training in technological development leads to increased productivity and greater organizational stability and flexibility to changing external requirements. This view is in line with earlier statement of Flippo (1980) who argues that planned development and training programmes will return values to organizations in terms of greater organizational stability and flexibility to changing situations. From the table above, majority of the respondent accepted the view that manpower training is most important to technological development in organizations. From the findings above, there is a clear indication that manpower training on technological skills

acquisition is a good management approach to improve efficiency in industrial activities. Modern technology has an imprint on management techniques, human resources management, training and development schemes appreciated as important for organizational development and growth (Kennedy and Donnel 1979). However, more recently and notably since the mid 1960s, more and more companies have become aware of the need to adopt a positive and systematic approach to employee training and development (Kennedy and Donnel 1972).

Okigbo (1977) also argued that the situation is much the same in Nigeria that is the importance of training and development has been realized. Our interest in this endeavour is to find out this realization has any direct relationship with the technological transfer. The result of the study show that manpower training and development on technological skills acquisition are expected to improve on the activities of industries especially improved increased productivity and greater organizational stability and flexibility to changing situations. This finding was supported by earlier report by Flippo 1980, Lipsitt 1996, Okigbo 1977.

The study also revealed that manpower training brings about technological change. This finding supported the report by Springborn 1977, Brewster 1980) who stressed further that training brings about change, hence it brings about technological change. The final result from the study also reveal that manpower training on technological skills acquisition is a good management approach to improve efficiency in industrial activities. This findings was supported by the study report by Caplow (1994), Walker (1997) who emphasized that a managerial policy that manpower in organization should be trained and educated in everything about the new process in the earlier phase of change in technology.

CONCLUSION AND RECOMMENDATIONS

The fast development and growth in technological know-how and techniques has led to vast growth of industrialization and technology in developing countries like Nigeria. Highly trained and educated manpower or workforce in companies on technological skills helps in improving efficiency, increasing productivity and promotes organizational stability and flexibility to changing situations in such business environment. An industry with trained professionals would equally improve industrially and technologically and otherwise.

Manpower training and development in industries equally brings about technological advancement takes in form of applying new methods of producing existing products, the development of new substitute and new design to meet up the modern trend of internal and global economy. It is therefore recommended that management of industries should pay priority attention on manpower training on new technological skills acquisition at regular basis; government should also monitor the regularity and quality training programmes for industrial manpower on technological skills acquisition through the ministry of Science and Technology; management of industries should also bring the new structures and process of

technology to the notice of their employees at regular time. Industries management should budget annually on adequate money for staff training and development programmes on modern technology application; manpower training and development programmes in industries should be sponsored purely on technology transfers, indigenous technology, technology cooperation and copy technology; the government should encourage serious scientific research in the country. This can be accomplished by direct funding of research in terms of research grants aught to be coordinated by the Ministry of Science and Technology.

Finally, management of industries should also encourage all grade level employees training and development programmes on technological know how from time to time, so as to avoid obsolete technologies.

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