

TECHNOLOGICAL CHANGE AND MANPOWER TRAINING IN NIGERIAN PUBLIC ORGANIZATIONS: A STUDY OF SELECTED PARASTATALS IN RIVERS STATE

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Abstract: Technological Change And Manpower Training In Nigerian Public Organizations: A Study Of Selected Parastatals In Rivers State. The study followed the descriptive survey design, using a five point likert scale questionnaire to generate data. Purposive sampling was used to select 80 respondents from a population of 141 middle level manpower, from five selected state parastatals in Rivers-state. The data gathered was analyzed using the t-test with the aid of statistical package for social sciences (SPSS) 20.0 version. With 0.001, 0.002 and 0.000 as the result obtained from the three hypotheses in this study, it points to the fact technological change is breeding a paradigm in manpower training process especially as it affects process effectiveness, efficiency and post-training performance of the trainees. It was therefore concludes that for public sector manpower to maximize training opportunities in this dynamic technological age; there is need to acquire both rudimentary knowledge and skill in ICT. Again, to bridge post-training performance gap, trainings should be designed to align with the technology workers are expected to use in performing their task. This creates familiarity and expertise in the worker, thereby making knowledge transfer from training to actual work situation less herculean

Keywords: Change, Effectiveness, Efficiency, Manpower, Technology, Training

Introduction

Manpower training is an important part of managing a business as they ensure that at all times, the employee possess the right skills and knowledge required for their jobs. Training of manpower therefore should not be seen just as a fringe benefit for the individual staff by the organization or an interventionist approach to temporarily solve organizational problems. Rather, it should be seen as an integral part of business functions that build a long-term strategic value for the organization by helping the manpower acquire relevant skills, knowledge and experience that can help the organizations attain their long term goals.

According to Alugbuo (2007), training is basically the acquisition and improvement in skills and knowledge needed to achieve a better performance at work. To Redmond (2007), training is a public or private education programme directly applicable to work situation. He averred that an organization may have employees with the ability and determination, appropriate equipment and managerial support and yet productivity fall below expected standards. The missing factor in many cases according to Redmond is the lack of adequate skills and knowledge which are acquired through training. Stating the relevance of training, Aidelomon (2010) opines that the inexorable march of time and the ceaseless glamour for social change combine to make adaptability and continuing preparation of the workforce as inevitable as the initial acquisition of knowledge and skills. This cannot happen if employees training and development do not occur in an enterprise. Training and development are like sharpening manpower skills in order to reflect the trends in technology and other socio-cultural environmental changes of an organization.

In response to technological changes, there has been a shift in the method and approach through which organization train their manpower. The prevalent method can be said to be highly reinforced by information and communication technologies (ICT). Main drivers for organizational success are the flexible and dynamic operations by Information Technology (IT) and the continuous improvement of employees' knowledge and skills by Human Resource Development. (Swanson & Holton III, 2009)

In recent years, the quick advancements in information technology have dramatically changed the Human resource landscape. Information technology has a significant role in simplifying HR processes, it has created a major shift in the way work gets done and people learn about their work. Recent technological advances in e-learning enable continuing professional development at organizations. In human resource development, e-learning technologies is well established compared to another applications of technology since training and development comprises the largest province of human resource development activity. The increase in technological solutions which can be employed by human resource management practitioners has added further aspects to the skills needed to deliver interventions effectively (Mankin, 2009).

Statement of the Problems

The Nigerian public service is often alleged to be suffering from under productivity. This many scholars associate with low morale as a result of demotivation or absence of motivation. The need to boost the morale of workers in public service becomes of great concern. Outside the challenge of irregular payment of salaries, one other challenge that confronts the Nigerian public service worker is inadequate training. While the government and donor agencies have consistently explained their investment in workers or manpower training with little returns in terms of improved performance to show for it, little attention is given to training needs assessment and the approach to training. Today's worker operates in an environment that is technology driven, hence trainings that will benefit him/her in the workplace needs to be packaged and presented with technological content that is consistent with his actual task. Observation however have shown that most public service organizations still adopts only the traditional classroom method of training and this has created a gap between actual training objectives and training knowledge transfer, thereby leading to waste of public resources. The problem of this study therefore is to examine the role technological change can play in bringing about improved manpower training in public organizations.

Objectives of the Study

The general purpose of this study is to evaluate the impact of technological change on manpower training in public organization. Its specific objectives include;

- i. To ascertain the impact of technological changes on training effectiveness
- ii. To determine the impact of technological change on training efficiency
- iii. To examine the impact of technological change on trainees performance

Research Questions

The following research questions will serve as a guide to this study;

- i. What are the impacts of technological changes on training effectiveness?
- ii. What are the impacts of technological change on training efficiency?
- iii. What are the impacts of technological change on trainees' performance?

Hypotheses

The following hypotheses are raised for this study

H₀₁: change in technology does not have significant impact on training effectiveness

H₀₂: change in technology does not have significant impact on training efficiency

H₀₃: change in technology does not have significant impact on trainee's performance

Review of Related Literatures

Conceptual Framework

Manpower training has become strategically integrated into every aspect of the organization, consequently, employee education, training and development are considered critical for organizational success (Aliaga, 2005). Corporate training is considered to be a key educational practice and strategic organizational tool that is connected with higher profits and lower employee turnover (Lee, Hsieh, & Chen, 2011). At the same time, manpower training faces new challenges posed by the rapidly changing organizational environment. In response, practitioners have become strategically proactive to anticipate human resource issues. Examples of these issues are the learning organization, knowledge sharing and management, open systems, self-directed learners, the ageing workforce, and continuous learning. Manpower training has begun changing its traditional career and organization development to address these issues, human resource function and concept has become more global, open and inclusive. For example, HRD is strategically involved in the deployment of distance learning and development technologies (Sleezer et al., 2002)

Information Technology has provided the locus of control of many human resource training interventions with the capability to move on to others, including the individual workers and work teams. By employing information technology, organizations can provide their employee the needed training and development continuously at any time and any place. The advancement of communication and IT technologies has eradicated barriers that prevent easy access to information and knowledge by everyone. Organizations are now gaining more value from the development opportunities provided through IT by developing training programs on almost every possible topic and make them virtually available through company-sponsored web sites (Briscoe, Schuler, & Claus, 2009). The use of information and communication technologies in the delivery of management training has major implications for lecturers, learners and institutions (Meredith & Newton, 2003). Organizations are increasingly counting on e-learning

as a solution to achieve immediacy, convenience and consistency (Lee, Hsieh, & Chen, 2011). E-learning interventions are rapidly becoming organizations' response to continuous learning and change in the new economy (Wentling et al., 2000). Today, advances in IT increase the connection flexibility and accessibility among workers across geographies; workplace learning is no longer physically constrained to one location (Sleezer et al., 2002).

Organizations worldwide are reconsidering workforce training strategies and issues because of rapid changes resulting from Internet and telecommunications innovations, globalization, e-commerce, and a constant stream of innovation. E-learning expenditures continue to grow, even though the use of e-learning greatly differs depending on the country, the type and size of organization. Both IT and HRD are strategically crucial to organizations. The processes and the innovations of IT and HRD have been adopted and implemented across organizations, which allows individuals to use the latest information technologies to acquire knowledge and learn anything, anywhere and anytime. Computer literacy and a focus on lifelong learning have created a teaching/training environment where individuals are in control (Marquardt, Berger, & Loan, 2004). This in fact allowed methods for delivery of training programs to shift from traditional classroom-based training to technology-based (especially web-based) learning and blended (classroom and technology) learning. Training is becoming more individualized and tailored to each need, which has led to a growth in the use of Electronic Performance Support Systems (EPSS). An increasing number of companies are making extensive use of company-wide satellite communication networks, which provide access to a wide range of training in new products for sales, update employees on corporate policies and activities, and educate engineers and other technical professionals. Companies are developing learning portals to provide their employees with online access to technical information and a wide range of training and development (T&D) courses, which can be accessed through personal computers, laptops, and personal digital assistants and downloadable to hand-held devices. E-learning is now democratizing manpower knowledge acquisition process through the development of computer-based training and making it available to everyone's fingertips through various tools (Briscoe et al., 2009)

E-learning Innovation is the most recent technological advance in training and learning development, this method of delivery is being captivated by many organizations and learners because the learning material can be easily accessed at times that are most convenient for the individual, with the learner controlling the amount of time dedicated to it. It can embrace the use of CD-ROMs and DVDs, as well as materials available via the Internet or organizational intranets. (Gilmore & Williams, 2009) E-learning is defined as "instruction that is delivered electronically". It comprises almost anything that teaches a skill or conveys information in a coordinated style online. Such programs are administrated through what called learning management systems (LMSs). E-learning includes asynchronous text-based courses, job aids, educational games, and video and audio segments, as well as synchronous media like teleconferencing and chat rooms. (Cascio, 2003)

The Chartered Institute of Personnel and Development (CIPD, 2009) went to that there is no universally accepted definition of e-learning, but CIPD (2009) defined e-learning as learning that is delivered, enabled or mediated using electronic technology for the explicit purpose of training in organizations, CIPD (2009) also have described e-learning in their survey with inclusive and exclusive definitions; e-learning can be described as an inclusive definition that "it includes the use of distributed technology products (mainly CD-ROMs) which do not require the user's

computer to be connected to a network”, an exclusive definition would exclude these products and include only products delivered through the Internet or an intranet. Another definition that has been presented by the Australian Flexible Learning Framework (AFLF, 2007) explains “e-learning as the use of technology in the delivery of education and training. It includes the use of web resources, wikis and virtual classrooms as well as MP3 players, mobile phones and personal digital assistants (PDAs) to create more flexible learning options”.

Types of E-learning

To date four types of e-learning seem to have emerged: web-based training which inclines not to involve any support from HRD practitioners (i.e. considered very much like a distance learning method); supported online learning which involves online support from a trained tutor ; e-learning community which involves online collaboration and knowledge sharing among a group of learners (online instructor or facilitator can be provided); and, informal e-learning by which learning occurs as a result of online communications with others who can be internal or external to the organization (Mankin, 2009). CIPD (2009) identifies three examples of current e-learning practice:

❖ *Web-based training:* In corporate training, technology is used primarily to deliver content to the end user without main interaction with (or support from) training professionals, associates or managers.

❖ *Supported online learning:* In higher education, most of the content of the course may be delivered by providing lectures or distance-education textual materials, but the course is classified as e-learning because the interaction with the instructor, the dialogue with other students, the searching for resource materials, the conduct of cooperative activities and the access to course outlines and supporting material are all performed online.

❖ *Informal e-learning:* There are an increasing opportunities for technology to move beyond these „course-based“ approaches of e-learning and enhance informal learning in the workplace. In many knowledge-intensive organizations it is coupled with knowledge management. According to the AFLF (2007), E-learning can be presented and delivered to the learner in many different ways based on the degree of interactivity required of each:

Level 1 (low interactivity - mainly text, multimedia or graphic one-way communication): e-learning is the most basic, and may add up to little more than electronic delivery of content to the learner. There may be some online assessment and use of media to support the learning, but overall there is a low degree of online interaction. Examples include placing Microsoft Power point presentations online, e-books, and online manuals.

Level 2 (moderate to high interactivity - has some degree of learner to computer interaction): e-learning provide the learner the possibility to interact with the content being delivered on screen, and make use of a range of media resources to enhance the learning. Nevertheless, it does not build in interactions between learners, or between learners and their instructor. Examples include online quizzes and tests, computer games, demonstrations and simulations.

Level 3 (high interactivity - includes learner to learner and learner to trainer interaction): it is the top level of e-learning. It encourages and supports self-directed learning, may be rich with media, and as with traditional classroom training it involves the learner in a learning community. An example is a virtual classroom.

Benefits and Barriers of Manpower Training Through ICT

As technology enables absorbing and interactive presentation of distance learning materials, there is evidence of enormous enthusiasm on the part of organizations to pursue the development of this approach, and benefit from the opportunities it introduces. While e-learning has been portrayed as requiring high investment in terms of hardware, software and design time, it has also been portrayed as cost effective in the long run, with the ability to provide speedy and flexible training. (Torrington, Hall, & Taylor, 2008)

E-learning initiatives can be designed to contribute to the strategic objectives; it supports company initiatives such as increasing the number of customers, introducing new ways to carry out business such as e-business, and speeding the development of new products or services (Kumpikaite & Čiarniene, 2008). E-learning continues to expand as it also allows for individual employees to learn immediately and asynchronously rather than waiting until a larger group has been identified and is available to be trained.

E-learning provides employers with an exceptional opportunity in the workplace learning, employers can use e-learning to enhance the knowledge and skills of their employees and to create lifelong learners, e-learning became a choice to any organization looking to improve the skills and capacity of its employees (Capece & Campisi, 2011). Key business drivers recognized for e-learning implementation were to increase staff knowledge, provide online access to training materials, reduce costs and times associated with training in the long term and ensure quality and consistency of training.

E-learning offers significant economic and social advantages over traditional classroom training. However, it has become obvious that making e-learning available to unprepared and unsupported learners will not work. E-learning must be properly presented and sufficiently resourced (CIPD, 2009). The benefits of e-learning include (AFLF, 2007; CIPD, 2009):

- Available 'just in time' and can be used continuously for learning and reference.
- Flexibility access and use of content from anywhere at anytime
- Reinforcement the culture and values of organization.
- Can realistically simulate work field environments that may be hazardous or otherwise inaccessible.
- Ability to reach simultaneously an unlimited number of employees.
- Uniformity of delivery of training.
- Can achieve cost and time reductions in delivering training.
- Ability to monitor of the learning process.
- Possibilities of global connectivity and collaboration opportunities.
- Ability to personalize the training for each learner.
- The ability to motivate trainees and provide immediate feedback to the learner's questions or responses.
- Consistency of training delivery
- Sustainable and easy to update.

On the other hand, according to CIPD (2009), perceived barriers to the effectiveness of e-learning in organizations include:

- Limits of current technology infrastructure.
- Ensuring learners have time and space to participate.
- Providing appropriate support for learners.
- Finding attractive, relevant and high-quality content.
- Gaining line manager support and commitment.
- Employee hostility towards e-learning.

- Motivating learners to complete courses.
- Lack of basic IT skills in the workforce.

Manpower Training Needs Assessment

It is important to note that, it is not all the performance problems of manpower that require training and or development. Hence, the need to conduct a systematic training needs assessment before training and development are administered. The essence of training needs assessment among other things, according to Salas and Canon (2001) is to identify the specific skill required by each trainee and identify their peculiarities in learning so that appropriate training methods can be adopted.

Alugbuo (2007) postulates a three step approach in determining training needs in an organization. These approaches include;

- a) **Organizational Analysis:** This determines where training emphasis should be placed within the organization.
- b) **Operation Analysis:** This determines what the training should consist of. This requires a study of what a person should be taught if he is to perform his task with maximum effectiveness.
- c) **Man Analysis:** This determines who needs to be trained and what skill, knowledge and attitude should be augmented or improved. He also highlighted the following as techniques that can help to determine training needs;
 - i. Observation
 - ii. Interviews and Survey questionnaire
 - iii. Group discussions
 - iv. Performance test
 - v. Personnel records
 - vi. Merit rating and performance appraisal
 - vii. Job or activity analysis
 - viii. Production records and other performance results
 - ix. Long-range business and organizational plan.

Hassan (2007) advanced the followings as the techniques used for training needs assessment.

➤ **Job Description:** job analysis consists of job description, job specification, job evaluation etc; this job analysis involves a thorough study of all responsibilities of the relevant job. It should be detailed to such a degree that those conducting the training can use the job analysis as a yardstick for their course content. When an employee's job description has been defined, the trainer can easily factor his curriculum in a very close proximity of what will be expected of the employee.

➤ **The Difficulty Analysis;** The job analysis focuses attention on enumerating the numerous duties that a worker must perform. On the other hand, the difficulty analysis establishes the duties that cause the employee the greatest amount of difficulty and how this difficulty can best be solved through better training.

➤ **Problem Solving Conference;** Another time tested technique, according to Hassan (2007), is to conduct periodic problem solving conferences which may take the form of or be part of a plan for a new product task or technology or tied in with a training program.

- *Drive Pattern Identity*; The extent of an employee's development depends on his motivations. Identifying the forces that cause an employee to behave in a certain way, may be useful in determining his individual training need and how to stimulate his desire to fulfill that need. An analysis of this kind for example may determine that the employee has an urgent need for self- confidence. His individual training program should be made to stress the importance of attitude, skill etc and any other asset that would give him this self confidence.
- *Analysis of Organizational Policy*: Organizations policy will affect the amount of training offered. An explanation of various policies should be covered in the training program of particular concern are those policies that involve change, alteration and major revamping of training programs. In organizations undergoing merger activity, product diversification and new market penetration, a great deal of sensitivity training must be carried on policies of today and expected changes in the future.

Principles of Effective of Manpower Training

For Linda (2011), the ten principles of manpower development are,

- *Relevance*: Provide relevant training so that employees can see the value of the development plans. Long meetings that do not seem to have anything to do with the day-to-day duties should be avoided.
- *Timing*; keep training sessions short and to the point. Staff can become overwhelmed when supplied with too much information at one time. Infuse employees with important skill updates that they can put to use immediately.
- *Flexibility*: Give employees training that incorporate giving employee's autonomy to make decisions.
- *Goals*: Define your company goals and devise training and staff development techniques that lead to fulfilling those goals. Keep all staff development projects aligned with your company purpose and focused in customer satisfaction.
- *Identifiers*: Identify the skills and characteristics of individual employees and arrange for them to participate in training that taps into their natural abilities.
- *Consistency*; maintain a consistent schedule of training as part of organizational culture. Staff development should be an ongoing, integral part of business to ensure optimum production and employee satisfaction while keeping up with trends and changes in the industry as they occur.
- *Support*: support the effort of staff who indicate a desire for self- improvement. Listen to employees when they tell what kind of training they need and how it will improve their performance.
- *Encouragement*: Encourage staff to engage in staff development projects and to make suggestions. Allow staff to collaborate and develop teams that are directly involved in future training plans.

- **Supply:** while training and coaching are an integral part of staff development, supply staff with the tools they need to be successful. Update computers and other equipment as needed when new work processes place additional expectations on employees.
- **Intervention:** When a problem is identified within members of staff, nip it in the bud early by talking to the errant worker or instituting changes that effectively stop the harmful behavior. Allowing staff members to continue upsetting the flow of work can be infectious and negate efforts of positive staff development.

Materials and Methods

This study followed the descriptive survey design, using a five point likert scale questionnaire to generate data. Purposive sampling was used to select eighty (80) respondents from a population of one hundred and forty one (141) middle level manpower, from five selected state parastatals in Rivers-state. The data gathered was analyzed using the t-test with the aid of statistical package for social sciences (SPSS) 20.0 version

Results

In this section, the t-test results obtained from the three hypotheses earlier stated in this study were presented

Hypotheses One

H₀₁: change in technology does not have significant impact on training effectiveness

SPSS Output 1: T-Test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
	Change In Technology	49.8200	80	8.61395	2.17676
	Training Effectiveness	55.5400	80	5.22810	.76496

Paired Samples Correlations

		N	Correlation	Sig.
	Change In Technology & Training Effectiveness	80	.280	.302

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Change In Technology – Training Effectiveness	-9.51000	9.92812	1.64688	-12.62858	-7.41142	-6.801	79	.001	

From the SPSS output above, the p-value is 0.001 which is significant; hence the null hypothesis was rejected. It was therefore concluded that change in technology is causing a significant effect on the effectiveness of public sector workers training in Nigeria.

Hypotheses Two

H₀₂: change in technology does not have significant impact on training efficiency

SPSS Output 2: T-Test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Change In Technology		49.8200	80	8.61395	2.17676
Training Efficiency		58.1600	80	7.89705	1.25823

Paired Samples Correlations				
		N	Correlation	Sig.
Change In Technology & Training Efficiency		80	-.211	.542

Paired Samples Test					
		Paired Differences	t	Df	Sig. (2-tailed)
Change In Technology – Training Effectiveness					

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Change In Technology – Training Efficiency	-8.24000	13.88372	1.86345	-13.18572	-5.29469	-4.197	49	.002

From the SPSS output above, the p-value is 0.002 which is significant; hence the null hypothesis was rejected. It was therefore concluded that the effect of technological change on the efficiency of the training of public sector workers is significant

Hypotheses Three

H₀₃: change in technology does not have significant impact on trainee's performance

SPSS Output 3: T-Test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
	Change in Technology	49.8200	80	8.61395	2.17676
	Trainee's Performance	56.5200	80	7.01845	1.03395

Paired Samples Correlations				
		N	Correlation	Sig.
	Change In Technology & Trainee's Performance	80	-.226	.282

Paired Samples Test

Paired Differences	T	df	Sig. (2-tailed)

Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
-11.60000	14.35390	1.98843	-15.39514	-7.50486	-5.613	80	.000

From the SPSS output above, the p-value is 0.000 which is highly significant; hence the null hypothesis was rejected. It was therefore concluded that technological change has significant effect on the performance of trainees in the Nigerian public sector

Conclusion

As organizations adapt to the changing technological environment, they should take into cognizance its influence on the competencies of their manpower stock. In the Nigerian public organizations, the result obtained from this study points to the fact technological change is breeding a new paradigm in their manpower training process especially as it affects process effectiveness, efficiency and post-training performance of the trainees. This paper therefore concludes that for public sector manpower to maximize training opportunities in this dynamic technological age; there is need to acquire both rudimentary knowledge and skill in ICT. Again, to bridge post-training performance gap, trainings should be designed to align with the technology workers are expected to use in performing their task. This creates familiarity and expertise in the worker, thereby making knowledge transfer from training to actual work situation less herculean

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