

UNIVERSITY OF CAPE COAST

HUMAN RESOURCE DEVELOPMENT AND STEVEDORE
PRODUCTIVITY AT THE PORT OF TEMA

BY

REJOICE DELALI AFI ANANE

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:.....

Date:.....

Name: Rejoice Delali Afi Anane

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature:.....

Date:

Name: Dr. E. K. Ekumah

ABSTRACT

The study sought to establish the assertion that there is a relationship between Human Resource Development and productivity by examining the effect of Human Resource Development on stevedore operation at the Tema Port in terms of ship turn-around time, ship productivity, labour productivity and accident rate.

The study investigated the educational background of the stevedore gangs and officers, how training needs analysis was conducted, the effect of training on stevedore productivity and reduction in accident rate. Structured questionnaires, one-on-one interviews with managers and supervisors were used for primary data collection. Secondary data were collected through journals, Ghana Ports Handbook, internet materials and academic publications.

Purposive sampling was used to select the sample size of the target population. Socio-demographic background of respondents, Educational background of stevedore gangs and productivity, Training Needs Analysis, Training and Productivity and accident rate were the areas considered in the study.

The findings established the fact that the literacy rate of the stevedores had improved significantly by 2006 as compared with that of 1986 and training had contributed largely to improved productivity as a result of transfer of knowledge, skills and attitude unto the job. It is recommended that Ghana Ports Harbours Authority (GPHA), as landlord, initiates formal training programmes for dockworkers and also make the profession attractive to highly educated people.

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DEDICATION

To Ivana Obenewaa, my daughter and Stevens Siaka-Anane, my husband
as well as my mother and siblings.

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LIST OF ACRONYMS

ASTD	-	American Society of Training and Development
CTS	-	Carl Tiedemann Stevedoring
FGD	-	Focus Group Discussion
GPHA	-	Ghana Ports and Harbours Authority
HPTI	-	Hamburg Port Training Institute
HRD	-	Human Resource Development
ILO	-	International Labour Organization
ITF	-	International Transport Workers Federation
PDP	-	Port worker Development Programme
PNDCL	-	Provisional National Defence Council Law
PPE	-	Personal Protective Equipment
RTG	-	Rubber Tyre Gantry
SPSS	-	Statistical Product and Service Solutions

CHAPTER ONE

INTRODUCTION

Background of the study

Literature and previous studies have shown that human resource development particularly education and training contribute significantly to economic development in terms of increased worker productivity and income (Yussol et al, 2003). For example, Rowden (1995) stated that "Businesses that have made training, education and development a priority are seeing that it pays off through greater profitability and increased worker satisfaction" (p. 356). It can also be said that the existence of more skilled human capability can make an economy more productive, innovative and competitive.

Essentially, human resource development means the development of skills and efficiency in the existing and potential manpower related to education and training, and efficiency or productivity improvement, which are concerned with value added per worker.

Human resource development is not only essential but critical to an organization's survival. An organization that is short on capital can borrow money but an organization that is short of the required human resources has little chances of survival, either in the short or long term perspective (Association of Development Research & Training Institute of Asia and the Pacific, 1995). It is

therefore important for an organization to make effort to invest in its human resources to ensure a productive contribution to the organization and the national development process.

In this 21st century, organizations are faced with increasing globalization and rapidly changing technologies. While technological advancements in the workplace continue to be the primary factor in maintaining a competitive advantage, organizations also recognize the need to address the technical knowledge, skills and attitudes of the workforce. This has led to an increased emphasis on the role of human resource development in organizations. With increasing globalization, it is more and more appreciated that productivity improvement is crucial to a country's competitiveness and its integration into the global economy (Johnson et al, 2000).

Ghana, like many advantaged maritime countries, relies on sea transport to export most of its best known products such as timber and cocoa and also import a wide range of goods including raw materials for the many processing industries that flourish in Tema and Takoradi.

The seaports of Ghana, especially the two largest ports of Tema and Takoradi, play a vital role in international trade, which is very important to the economy of Ghana. They have maintained a smooth flow of goods to and from Africa, America, Europe and worldwide.

The seaports are supervised and maintained by the Ghana Ports & Harbours Authority (GPHA). GPHA is a statutory, public organization incorporated in 1986 by the PNDCL 160 (1986) with a portfolio to plan, build,

develop, manage, operate and control ports in Ghana. It was a merger of three companies, namely, Ghana Cargo Handling Company, Takoradi Litrage Company and the Ghana Port Authority.

Between the Tema and Takoradi Ports, they have a capacity of 15 million tons, which currently accounts for over 90 per cent of Ghana's import and export trade, with average annual growth rates of 6.4 per cent for Tema and 30 per cent for Takoradi. Currently Tema records an average turn around time of 53.4 hours (Ghana Ports and Harbours Authority, 2001).

The seaports are fast becoming the transit point for goods to and from the landlocked countries of Burkina Faso, Mali and Niger. Until recently, most of this transit trade was handled by rival West African ports, especially the francophone ports of Abidjan (Cote d'Ivoire), Lome (Togo), Cotonou, (Benin), which have the advantage of sharing a common language with their landlocked neighbours. For the seaports of Ghana to remain competitive in the sub-region, it has to be more efficient.

Stevedoring is one of the cardinal activities of a port. Stevedoring traditionally means the loading and discharging of cargo from a vessel. However, in Ghana, this meaning has been operationalized to include the transfer and stacking of cargo in the covered or open storage areas of the port. Since 1997, the stevedoring companies have been made to perform the extra responsibility of transferring cargo from the quay and stacking them in the shed/warehouses (Ghana Association of Stevedoring Companies Handbook, 2004).

In line with government policy, private sector participation was introduced into the activities of the ports. Until 2000, only two private stevedoring companies operated in the Ports. These are: Atlantic Port Services and Speedline Stevedoring Company Limited. These Companies were doing 25 per cent stevedoring, whilst GPHA was doing 75 per cent. Currently, there are nine stevedoring companies including GPHA. GPHA has ceded off 50 per cent of its stevedoring operations to the new private stevedoring companies and now retains 25 per cent (Ghana Ports and Harbours Authority, 2001).

The ports of Ghana are in competition with other ports in the sub-region for cargo especially from and to the landlocked countries of Burkina Faso, Mali and Niger. In order to attract and maintain a substantial amount of the transit cargo, there is the need for the ports to be highly productive in terms of

- Ship productivity per ship and gang hour;
- Labour productivity per gang hour and;
- A Low accident rate record.

All of these determine the ship turn-round Time. It is clear that when the seaports become less productive and unable to attract cargo or vessels they have negative impact on the national economy as well.

Statement of the problem

A manpower audit carried out by Hamburg Port Training Institute (HPTI) GmbH in 1986 indicated that majority of dockworkers, employed mainly at the Operations Department, were primary and middle school leavers and others have

no education at all but had training on the job (Humburg Port Consulting Report, 1986). The number of dockworkers and the level of education they had as at the time are indicated in Table 1.

Table 1: Level of education of dockworkers

Level of education	No. of Dockworkers
Primary School Education	108
Middle School Leaving Certificate	82
Secondary Education	21

Source: Hamburg Port Consulting, 1986

The situation has not changed much. The greater number of stevedore staff, especially the dockers still remain middle school leavers and recently some Senior Secondary Certificate of Education graduates have been employed (GPHA Stevedore Section, 2002).

With the introduction of the new labour law and the implication of retaining casual employees who have worked continuously for more than three months or more, the employment of dockworkers have been out-sourced to a company called the Ghana Docklabour company (GDLC). The GDLC is responsible for recruiting labour for the stevedoring companies on daily basis, though some of the stevedoring companies, especially GPHA have their own permanent standing dockworkers and supplement them sometimes with labour from the Dock Labour company only when the workload increases. Most of the

time, the companies do not have control over the educational background of the dockers.

Since the Human resource development function is essential for increasing production efficiency and the development of knowledge, skills and attitudes of employees, GPHA has, over the years, invested in human resource development in terms of in-plant, local and overseas training programmes.

Since 2003, GPHA has extended its training activities to cover the private stevedoring companies, who also employ large numbers of dockworkers, in order to achieve a uniform level of productivity in the port (Ghana Ports and Harbours Authority, 2004).

GPHA, as the landlord, sets the productivity targets to be achieved and it is the standard for all stevedoring companies. It has the responsibility of ensuring that the ultimate objective of the port, which is efficiency and high productivity are not compromised.

The stevedoring companies are responsible for loading and off loading cargoes from vessels that call at the port. They are generally the holders of an administrative concession bestowed by the Port Authority (GPHA), which entitles them to use an area placed at the edge of the pier where they carry out their work. Stevedoring productivity depends on so many factors. Some of which include:

- The physical structure of the port;
- The equipment type and conditions;
- Nature and type of vessel;
- Characteristics of vessel, vessel equipment/lifting gear and

- The efficiency of labour.

In order to pursue the vision of being the ‘preferred one-stop shop hub’ and to maintain their competitive edge over other ports in the sub-region’, the management of GPHA has since 1986, made staff training as a high priority to equip its workforce with the necessary skill, knowledge and attitudes to achieve its goals. This study seeks to examine whether these training programmes have had any effect on the goals of the establishments under study.

The purpose of this study is to examine the role of human resource development in the stevedore productivity of the port, in terms of: productivity per ship or per gang hour, labour productivity per gang and accident rates by comparing the performance of the two best performing stevedoring companies in the port; namely Ghana ports & Harbours Authority and Carl Tiedemann Stevedoring Company to determine how much HRD has contributed to stevedore productivity in the port.

Objectives of the study

The general objective of this study was to establish the effects of human resource development on stevedore productivity at Tema Port.

The specific objectives are to:

- Determine the educational level of the manpower in the stevedoring gangs in the two stevedoring companies;
- Examine whether stevedore productivity is a result of training events in the two companies;

- Compare how training needs assessments are conducted in the two organizations;
- Establish whether knowledge, skills and abilities acquired during training are transferred onto the job in the two stevedoring companies;
- Determine what other factors have influenced stevedore productivity in the port; and
- Suggest ways of improving stevedore productivity in the two organizations.

Research questions

This study is guided by the following research questions:

- Are the training programmes relevant to the training needs of the employees?
- Is there a relationship between training needs analysis and training programmes designed for employees?
- Do employees have the opportunity to transfer knowledge, skills and attitude acquired on to the job?
- Does the transfer of knowledge, skills and attitude of employees to their jobs reflect their output level?
- Is there a relationship between training and productivity?
- What other factors have influenced the level of productivity other than training?

Operational definition of terms

Human Resource Development (HRD)

The concept of human resource development as used in the study refers to the development of the skills, knowledge and ability of the stevedores to enable them improve their performance in stevedore operations.

Stevedores

The stevedores are the dockworkers or the employees of the Port who are engaged in the loading and off-loading of cargo from vessels.

Ship productivity per ship and gang hour

Ship productivity is the output achieved per ship working hour and is used to measure the efficiency of ship operations. It is the most important measure to ship operators and a valuable means of measuring all-round terminal performance.

Labour productivity per gang hour

Labour productivity measure relates the traffic throughput to the total number of people employed in the terminal. This indicator enables the Manager of Port Authority to monitor labour productivity and, indirectly, terminal operating costs.

Boxes/tonnes per ship work hour

Equivalent container moves or Tonnes of cargo handled per net ship working hour (calculated by dividing the total equivalent of container movements or Tonnes of cargo by the gross working time minus the non-operational time and idle time).

Boxes/tonnes per gross gang hour

Equivalent Tonnes of cargo worked or Tonnes of cargo per gross ship working hour (calculated by dividing the total equivalent container movements or Tonnes of cargo by the time the vessel worked measured from the start of work and finish of work).

Organisation of the study

The study covered five chapters. Chapter One dealt with the introduction, which covered the background to the study, the statement of the problem, of the objectives study, operational definition of terms and organisation of the study.

Chapter Two contained the conceptualization of Human Resource Development (HRD), which covered areas such as the historical background of training, the concept of HRD, training needs assessment, description of the value of training intervention, especially in a port industry and some similar studies carried out by other researchers,

Chapter Three described the study design, the procedure for data collection, techniques for sampling, research instruments and method for

analyzing the data to answer the research questions. Chapter Four is a presentation of results from the data analysis and their interpretation. It also presents some evidence of stevedoring operations and worker productivity. Chapter Five deals with summary, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents the historical background of training, followed by the concept of Human Resource Development, needs assessment, description of the value of training intervention, especially in a port industry that have made positive contributions to the performance of both individual workers and their employing organizations and some similar studies carried out by other researchers.

Historical background of employee training

Training workers to improve their job performance for enhanced productivity has a long history. Through the decades, training has been used as a tool for providing workers with specific ways of performing their jobs better, which in turn, contributes to employers' improved products and profitability. Eurich (1990) observed, "Educational requirements often are the handiest means of ensuring that a person is equipped to continue practicing a profession" (p.188) Training techniques have evolved over the years. In addition, attitudes about the value, necessity and significance of training have evolved as well.

Prior to the rapid industrialization in the mid-19th century, work in the United States of America was learned on-the-job from people who were already performing the job. Native Americans modeled working behaviours from their elders and their peers, and during the colonial period, on the job training was the norm (Nadler, 1979). Learning to do one's job was taught by men experienced in their respective trades (DeSimone and Harris, 1998).

On the job training is still the norm when it comes to stevedoring operations. In Ghana, there is no known school where the skill for stevedoring operation is taught. Almost all the stevedoring gang members learnt from their peers or elders who were experienced on the job. Perhaps that was why it was possible to train the uneducated to do stevedoring operation. Now there is a global transformation in the stevedore operations. The shipping industry is now shifting from the conventional bulk cargo to containerization and this require the use of more sophisticated equipment. It will, therefore, be in the interest of the port to employ more educated people who will be able to handle the equipment with less difficulty and to reduce the rate of accidents.

Concept of human resource development

Human resource development (HRD) as a concept is both complex and problematic. This arises because HRD has no single or definitive meaning. Definitions differ according to the perspectives adopted by different writers (Harrison, 1997; Garavan, 1991; Stewart and McGoldrick, 1996). Similarly HRD can and does pursue a wide variety of agenda and it can serve a wide range of

purposes. Much of the literature is perspective rather than theoretical/empirical in nature and is written from the perspective of the medium to large scale organization that possesses the expertise and resources to invest in HRD. Similarly, a dominant perspective is one of formalized, systems driven HRD provision rather than organic informal HRD.

Much disagreement exists, therefore, about what constitutes HRD and common usage of the term leads to the exclusion of important contextual factors. This confused and problematic situation is further complicated by other biases, including the failure to recognize a multiplicity of models, the futile search for a unitary definition and the narrow notion of an organization which underpins the literature. The lack of a clear conceptual base for HRD, the assumptions made about the nature of the employment relationship, the almost total emphasis on the formal at the expense of the informal and incidental learning processes and a preoccupation with the notion that a definite outcome and end point is possible from HRD (Garavan et al, 1999).

Human resources are not just capital, income or material resources but then the ultimate basis for wealth of nations. Human beings are the active agents of change who accumulate capital, explore natural resources, build socio-economic and political organizations and carry forward national development.

According to Harbison (1973), human resources are the energies, skills, talents and knowledge of people which are or which potentially can or should be applied to the production of goods or the rendering of useful services. The global trend now is on the development of human resources because it is believed that

the knowledge human beings possess is the pivot for achieving an increase in total productivity.

Human resource development is seen as any activity that directly affects the attitudes, knowledge, skills and practices of individuals that will assist in performing roles either in the present or in the future.

Human resource Development often referred to as training is extremely important for both new and existing employees. This importance was stressed by DeSimone and Harris (1998) in their definition of Human Resource Development (HRD) as a set of systematic and planned activities designed by an organization to provide its members with the necessary skills to meet current and future job demands. HRD activities should begin when an employee joins an organization and continue throughout his or her career, regardless of whether that employee is an executive or semiskilled line worker. HRD programmes must respond to job changes and integrate the long-term plans and strategies of the organization to ensure the efficient and effective use of resources.

Training needs assessment

The concept of need typically refers to a discrepancy between what an organization expects to happen and what actually occurs. These discrepancies may become the foundation of a training or HRD need. Ultimately, the goal of HRD is to improve an organization's effectiveness by solving current problems, preventing anticipated problems and including as participants those individuals and units that can benefit most (DeSimone and Harris, 1998).

Needs assessment, according to DeSimone and Harris (1998), is a process by which an organisation's needs are identified and articulated. It is the starting point of the HRD and training process. They see needs assessment as a study that can be used to identify:

- An organisation's goals and its effectiveness in reaching these
- goals
- Discrepancies between employees' skills and the skills required for effective job performance
- Discrepancies between current skills and the skills needed to perform the job successfully in the future; and
- The conditions under which the HRD activity will occur.

Identification of training needs, if done properly, provides the basis on which all other training activities can be considered. With this information, HRD professionals learn where and what kind of programs are needed, who needs to be included in the programmes, whether there are currently any roadblocks to the programmes effectiveness, and establish the criteria to guide programme evaluation. It is obvious, then that the needs analysis forms the foundation for an effective HRD effort (DeSimone and Harris, 1998).

Organizational commitment to training needs assessment

Even though needs assessment is very important, many organizations do not conduct needs assessment as frequently or as thoroughly as they should. Some of the reasons as identified by DeSimone and Harris (1998) are that:

- Needs assessment is a difficult and a time consuming process. A complete needs analysis involves measuring a variety of factors at multiple levels of the organization;
- Managers often decide to use their limited resources to develop, acquire and deliver HRD programmes rather than to conduct an activity they see as a preliminary study;
- They reach the incorrect conclusion that a needs assessment is unnecessary because available information already specifies what an organization's needs are. Factors such as fads, demands from senior managers and temptation to copy the HRD programmes of widely admired organizations or competitors often lead to such conclusion; and
- There is a lack of support for needs assessment. This can be caused by either lack of bottom-line justification or the HRD professional's inability to sell needs assessment to management. Documenting the assessment and its benefits and using analogies from respected fields (e.g. medical diagnosis, engineering scoping) are two ways that may build support for doing needs assessment (Rossett, 1990).

Training and productivity

Productivity has been defined by the National Trade Union Congress of Mauritius (2007) as “a process of continuous improvement in the production/supply of quality output/services through efficient, effective use of

inputs, with emphasis on teamwork” for the betterment of all” (<http://www.npccmauritius.com/definition/>, retrieved on 20th July, 2007).

Over three decades, governments, politicians, academics and economists have all stressed the importance of productivity because of its relationship with the general economic health of a nation. According to Porter (1990), the goal of a nation is to produce high and rising standard of living for its people. The ability to do so depends on the capacity of its companies to relentlessly improve productivity by raising product quality, developing new products, improving product technology, or boosting production efficiency.

The issue of improved productivity is so important that some countries such as Canada, Japan, Germany, South Africa have established National Productivity Organizations. These Organizations were made up of many public and private stakeholders whose goal was to improve the quality of life through a better working environment, higher income and an equitable distribution of the fruits of productivity improvement.

With higher productivity resulting in higher foreign exchange resources, a nation can buy the needed resources as long as it can compensate for price differentials with processed resources. A vital factor in all these is the skills and intellectual capital levels of the workforce which add value in the processing of material, energy and information. The skills, knowledge, attitudes and motivation of the workforce determine the levels and quality of output when combined with the other factors (Arai et al, 1999).

Also, better productivity provides more profit for investment to promote enterprise development and economic growth in underdeveloped countries. Human resource development is the most important productivity factor and cannot be over looked when seriously considering productivity improvement package.

Productivity is key to a country's development and alleviation of poverty. The International Labour Organisation (ILO) recognizes this and supports all efforts in raising living standards and increasing productive employment and promoting cooperation between governments, workers and employers for many years.

Long term international statistical trends show that there is a strong macro-economic and statistical evidence that the more productive a national economy, the higher the personal income of workers and the lower the rate of inflation in the long term (Arai et al, 1999).

The role of training in high performance work organization

Training is a very important component of high performance work organizations, but it is not an end goal. Rather, training is characterized as a means to an end – the end being productive, efficient work organizations, populated by informed workers who see themselves as significant stakeholders in their firms' success. The short hand description for such a workplace is “high performance work organizations.” Jarboe and Yudken (1997) described high performance work organizations as:

“combining innovative work and management practices with reorganized work flows, advanced information systems, and new technologies (based on) the skills and abilities of frontline workers to achieve gains in speed, flexibility, productivity, and customer satisfaction (p.65)”.

Rothwell’s (1996) description of high performance organizations is characterized by flexibility, organizational practices that support prompt decision making, and few layers of command. Employees are empowered to meet or exceed customer needs and are supplied with the right resources at precisely the right times to perform optimally.

The skills required by employees to work effectively in high performance work organizations may certainly require training. In fact, they usually do. The difference is that in high performance organizations, the focus is on the output of training, not on the training itself. As a result, the various definitions of high performance contain many more elements than training, for example direct participation in determining work processes, representative participation with management, pay for skill or pay for work, sharing information, and management support (Levine, 1995).

According to Huselid (1995), a high performance firm’s strategy development and deployment include human resource development as a means for bringing about high performance. Broad and Newstrom (1992) reiterated the need for connecting training to the firm’s strategic planning initiatives.

Training as a component of performance improvement

A combination of pressures on companies in the context of globalization, increasing demands for higher quality products and services, ever increasing financial returns, and increasing employee demands require the redefinition of human resource professionals' responsibilities. A shift is occurring from design and implementation of training as a major focus to training for improved output. In other words, training and development is shifting toward performance improvement, which has been defined as the continually improving performance of individuals and organizations (Rosenberg, 1996).

Rosenberg (1996) described the relationship between training and performance improvement as follows:

“There is no doubt that training plays a key role in the development of high-performance workers and corresponding increases in productivity. But we have recently become keenly aware that not only is training expensive, it may not always be the best way to achieve performance goals. And we have also learned that training alone certainly is not as effective as when it is combined with other performance-enhancing strategies... While we build and manage training facilities and begin to deliver learning using alternative technologies we also need to link our work into a comprehensive process that leverages a much wider array of performance improvement interventions” (p.393).

Vander Linde, Horney, and Koonce (1997) described the implementation of performance improvement by citing a case of an auto manufacturing firm. A training manager at the firm explained that training staff conduct needs analyses

to identify potential solutions to business problems, and the solution may or may not require training. The training manager was quoted as saying, “Training isn’t always the only answer to performance issues here. Sometimes even the preferred way. We might suggest job aids, self paced learning, or a job redesign”.

In the implementation of performance improvement, training may be introduced to improve a worker’s performance; however, it is seen as only one way to improve the worker’s performance; however, it is seen as only to improve the worker’s performance. For example, Dean, Dean and Rebalsky (1992) identified factors in the workplace environment that could be changed; the result was a positive effect on performance that occurred more quickly and less expensive than by training the employees to make a specific change. A shift to performance improvement, also called “human performance technology” (Rosenberg, 1996) and “performance technology” (Bricker, 1992) “...helps link business strategy and goals, and the capability of the workforce to achieve them, with a wide array of human resource interventions which include but are certainly not limited to education and training” (Rosenberg, 1996. p.370).

Performance improvement goes beyond training by not only focusing on the analysis of job-related performance, but also by identifying the underlying causes of the performance in question. The result is the selection of solutions that will best improve employee performance in the context of overall organizational performance (Rosenberg, 1996). Therefore, performance improvement requires training professionals to focus on how participants’ performance is improved following training in terms of alignment with their companies’ goals, not just how

they responded to the training itself. Implicit is the need to contribute to the company's specific business goals (Rosenberg, 1996; Rothwell, 1995, 1996).

Human resource development and organizational strategies

With the evolution of business practices, so have companies' needs for developing the capabilities of their workforces. Training has been a consistent vehicle for developing those capabilities. Some of the current management literature, however, specifies that training can no longer be an isolated activity within an organization. On the one hand, training offered to employees without any context is often given a poor prognosis for success because it is not linked to or supported by other organizational initiatives (Brinkerhoff and Gill, 1994; Rothwell, 1996). On the other hand, when training is aligned with other strategic initiatives, managed as a process, it becomes a significant contributor to the firm's strategic planning and success (Appelbaum and Batt, 1994; Brinkerhoff and Gill, 1994).

Brinkerhoff and Gill (1994), described the traditional notion of training as a centralized, stand-alone department, with a long list of classes and workshops. This is being replaced by a new system of employee training and development, characterized by a focus on business goals, customer needs, the total organizational system, and continuous improvement.

This transition of thinking about training results from a realization that the list of "long classes and workshops" represents a frequently large and unaccountable investment of company resources, the results of which are often

lost on the participants because they cannot see the connection to their own work. Broad and Newstrom (1992) reported that the majority of money employers pour into training is wasted because employees do not see the training when they return to their jobs. Baldwin and Ford (1988) found that approximately 40 percent of a training programme's content was transferred to the workplace.

Brinkerhoff and Gill (1994) identified an additional misperception about traditional training. In that context, training is perceived as ...the locus of learning and change. The very terminology of instructional systems design is founded on the belief that discrete training programmes can somehow, if they are only more effectively managed, bring about the change that organizations are desperately seeking ... perpetuating the view that training programs are the point of leverage for bringing about the learning and change in employees (Brinkerhoff and Gill, 1994).

Rothwell (1996) stated that traditional approaches to training result in problems in the following four categories:

- Training often lacks focus:- The term “training” conjures up a range of names and concepts, from education and development to human performance terminology, all of which connote a wide range of roles and responsibilities. By limiting the functions to the term “training,” one minimizes the value and extent of impact training and development professionals play in enhancing performance in their organizations;

- Training often lack management support:- The value of human contributions to organizational productivity is not always obvious to manager, whose perceptions of organizational systems are limited to more tangible areas, such as finances, marketing and production;
- Training is not always planned and conducted systematically in ways consistent with what have long been known to be effective approaches to training design:- Training can solve problems attributable to an individual's lack of knowledge, skill, or attitude; however, training will not solve the problems of poor management practices. The application of training to inappropriate circumstances is often exacerbated by the people with training responsibilities within an organization. Often, the responsibility for training is given to someone who has been promoted from within, who does not have the necessary knowledge or skills of training, when or how to conduct training; and
- Training is not effectively linked to other organizational initiatives. When training is presented in an isolated fashion, the participants are unable to see the connection with other organizational initiatives, such as the firm's mission and strategies. The training receives little or no support when the participants return to their jobs, resulting in little change in their behaviour after the training is completed.

Training in large organisations

Motorola is often cited as exemplary for its attention to education for its employee (Commission on the Skills of the American Workplace, 1990; Marshall and Tucker, 1992). Motorola has a long history of training its employees and evaluating the impact of the training on improving individual and organizational productivity (Siegel and Byrne, 1994).

Wiggenhorn (1990), president of Motorola University, wrote about the changes that occurred in manufacturing in the early 1980s that affected profoundly the ways in which Motorola hired and educated its employees:

“All the rules of manufacturing and competition changed, and in our drive to change with them, we found we had to rewrite the rules of corporate training and education. We learnt that line workers had to actually understand their work and their equipment, that senior management had to exemplify and reinforce new methods and skills if they were going to stick, that change had to be continuous and participative, and that education – not just instruction - was the only way to make all this occur” (p.71).

As a result, Motorola began to budget \$60million annually to provide employees with a comprehensive range of skill instruction, all the way from the most basic skills (reading, writing and arithmetic) to “new concepts of work, quality, community, learning, and leadership” (Wiggenhorn, 1990, p.72.) Inherent in the process was a goal of redefining jobs, as well as providing employees with training opportunities (Wiggenhorn,1990, p.73) because of their belief that the benefits gained from skill upgrading could not be fully realized

without a reorganization of the workplace to which these employees would be returning (Bassi, 1995).

Motorola implemented the concept of Six Sigma, which “translates into 3.4 defects per million opportunities. There is always some way to apply the standard and strive for the goal. In effect, the Six sigma process means changing the way people do things so that nothing can go wrong” (Wiggenhorn, 1990, p. 74). As important, the term Six Sigma, gave everyone in the company a common language and the common goal of defect free products. However, before they could implement the Six Sigma concept, Motorola had to be sure their workers could read, write, and perform mathematics at a seventh grade level. Motorola management was appalled to discover that a large portion of their workforce lacked that level of skills, meaning that they had to find ways in which they could provide necessary remedial instruction. They adopted a policy that ensured everyone had the right to retraining; the policy also stated that a person could be fired if they refused training. If someone went through training and failed, then Motorola would help them to succeed at other jobs within the company. The company engaged local community colleges to assist them in formulating remedial curricula, and they developed some of the higher level courses, e.g. engineering courses, in partnership with colleges and universities. This course development led to the development of Motorola University (Wiggenhorn, 1990).

Motorola University’s goal is to ensure training and education for all of their employees in order “...to prepare them to be Best in Class in the industry; to serve as a catalyst for change and continuous improvement to position the

corporation for the future; and to provide added value to Motorola in the marketing and distribution of products throughout the world” (Retrieved from the world wide web: About Motorola University, <http://www.mot.com/MU/AboutMU.html> – 12/12/2007).

The port environment may not be the same as Motorola Company but the principles from the Motorola experience have a universal application. Since GPHA is the landlord who sets the targets to be achieved, it can find a way of upgrading the skills of the stevedore gangs in the port in order to increase their productivity through training. As stated earlier, the stevedore gangs, especially the dockers have very low educational levels. Now with globalization and the rapidly changing face of the port industry where conventional cargo is giving way to containerization with its attendant sophisticated use of modern equipment is an indication that there is the need to employ high level educated staff who can read and write and understand basic calculations or better still they can be trained to acquire those skills.

Training in small companies

Small and medium-sized companies are defined as those with 500 employees or fewer (Eurich, 1990, p.19). Training, specifically and human resource development, generally, is less prevalent in small firms than it is in large companies (Broadwell, 1996).

Most small firms are without dedicated staff, let alone an entire department, for providing training and development to employees. Broadwell

(1996) noted, “These smaller organizations not only have the same kinds of training needs as the larger organizations but they may also have greater requirements because of diversity of assignments created by their small size”. Some small companies incorporate human resource development strategies into their operations, regardless of their size. Rowden (1995) found that it “...may be very much a part of management philosophy and be implemented in various ways, including job enrichment, educational assistance, advising/coaching, on the job training, and so forth”.

Rowden (1995) conducted a qualitative study of three successful small manufacturing firms to identify the formal HRD activities which they provide to their employees. He was especially interested in establishing links “between human resource development, management, organizational behaviour and other functions of the organization, and the various measures indicative of a successful business” (p.358). The companies in his study were in the businesses of manufacturing paint and industrial coatings, furniture and commercial signage respectively (Rowden, 1995). Rowden (1995) found that though none of the three companies actually labeled their employees supportive activities as “HRD”, evidence showed that each company supported “...the unique market niche of the company through knowledge, skills, and attitude development, by integrating employees into company’s work practices, and by enhancing the quality of work life. By using HRD to improve the quality of their employees’ life, the employers in Rowden’s study described themselves as feeling secure about their work and believing that they had received adequate education to do their jobs. This in turn,

contributes to low turnover, high morale, and ultimately, higher productivity (Rowden, 1995, p. 370).

Regardless of size, education and training for workers enables them to be more engaged in their job and the company, resulting in higher productivity. Once again, the benefits to both the workers and to the firm are tangible.

The value of education and training in stevedoring operation

Employee training is often proposed as a solution to losing competitive edge. Constant technical changes, often brings challenges of hiring and retaining a workforce that can work successfully in the presence of those changes. Continual advances in automation have the effect of increasing production. That is good news. The not-so-good news is the increased demands on workers. Workers in this age of continuously improving technology must be able to read and interpret technical instructions, perform calculations quickly and demonstrate computer literacy. Unfortunately, these demands are being made on a workforce that is less academically prepared in reading and mathematics, more diverse demographically and is growing older (Carnevale, 1988; Mikulecky, 1995; Rowden, 1995).

Training is assuming increasing importance in today's global port industry in general and its container terminals in particular. Although training has to be carried out professionally, the concept incorporates many aspects which have to be taken into account and which often differ, depending upon which part of the world is under discussion. Basic education such as the ability to read and write is

considered an essential requisite in most parts of the world for successful vocational training in mobile equipment handling, maintenance, administrative and computerized functions, for example. However, in some developing countries, basic education is often lacking and ways of overcoming this drawback have to be devised, in which on-the-job training assumes the greatest importance. Moreover, basic training has to be followed by continuation training to hone the acquired skills to achieve even better productivity and safer operations (Cargo systems, 2000).

Ships earn money when they are at sea, carrying cargo between ports. Time in port, if not exactly wasted, is non-earning so extraordinary ingenuity is employed to minimize the time ships spend in port. A whole new technology, such as containerization and Ro/Ro shipping has been devised for the purpose of keeping the ship moving. It is the stevedores who hold the secret to efficient cargo work in the port. In the past stevedoring companies use thousands of dockworkers, but today they have mechanized and their operations are now capital intensive. Today they have invested in dedicated equipment costing millions of dollars ranging from giant cranes that lift containers on and off very large ships, to ground handling equipment that might be entirely automated and computer controlled.

The introduction of new technologies and handling methods within the world's container terminals has come about partly in parallel with the trends of globalization, privatization and modernization. These have, in turn, been subject to the influences of increasing competition, shrinking labour forces, cost-cutting,

capital intensive investment and the quest for improvements in efficiency and productivity (Cargo systems, 2000).

However, none of the aims and targets of the modern ports industry can be met without a skilled, motivated and safety conscious workforce. It is, therefore, incumbent upon the industry to invest in high quality training. Investing millions of dollars in the state-of-the art container terminals is one thing but it needs to be accompanied by investment in training; without a trained operator a US\$6 million gantry crane, for example, will at best be under utilized and at worst be a positive danger.

Although training has to be carried out professionally, the concept incorporates many aspects which have to be taken into account. For example, basic education such as the ability to read and write is considered an essential requisite in most parts of the world for successful vocational training in mobile equipment handling, maintenance, administrative and computerized functions. However, in some developing countries, basic education is often lacking and ways of overcoming this drawback have to be devised, in which on-the-job training assumes the greatest importance. Moreover, basic training has to be followed by continuation training to hone the acquired skills to achieve even better productivity and safer operations.

Kees Marges, the dockers' secretary of the International Transport workers Federation (ITF) believes that 'education and vocational training are extremely important for the future development of the port industry'. Good education and vocational training, he stated 'are increasingly being recognized

and used as instruments to improve not only the quality of the enterprises which are providing the port services but also their competitiveness' (Cargo systems, 2000).

Therefore, education and training are in the interests of the operators and the ports as a whole. Conversely, lack of education and training means a lack of opportunity to teach the workers the essence of transport economics and policies, the position of ports in the intermodal transport system, their dependency upon the other modes of transport and the real meaning of the terms 'competition' and competitiveness' (Cargo systems, 2000).

A port worker's development

Training port workers requires very large training infrastructures in order to provide the necessary comprehensive training schedules. The ILO, as part of its continuing technical co-operation has provided one such training infrastructure to bridge the 'training gap' through its Port-worker Development Programme (PDP). The programme has the full support of the ITF, which believes that implementation of the programme should be done with full co-operation of national unions representing port workers.

Because of the importance of the PDP to the global ports industry, a number of renowned international training experts have commented at length on it. One of such people is Uwe Breitling, a port, transport and training consultant based in San Jose, Costa Rica. According to Breitling, the underlying philosophy of the PDP is the 'provision of centrally prepared training materials, properly

tested and validated, to be delivered by specially trained and experienced instructors working within an established organizational framework’.

The PDP has the development objective ‘of enabling ports and terminals to establish effective and systematic port worker training conditions and practices, safety and the status and welfare of terminal employees of supervisory grade or below’. It covers foremen, drivers, operators, stevedores and other operational personnel of similar grades, as well as office and workshop staff of similar status.

The government of India recognized the need for comprehensive training and the value of the PDP. Faced with inefficient cargo handling operations and serious congestion, the Indian government sought to strengthen and upgrade the training of employees in the new skills demanded by modern cargo handling methods. An ILO project formulation mission examined the current performance and operating problems at the five major container handling ports in India and reviewed the current status of training. Its conclusion was that the performance of all the container terminals was well below their potential ‘due to fragmented and uncoordinated management structures, poorly developed planning and control systems and the unsatisfactory level of technical skills of managers, supervisors and port workers’.

In the past decade, the government of India has made large investments in the nation’s container handling facilities to overcome capacity and efficiency constraints. Despite these investments, however, very few port workers have been given training in modern cargo handling methods. Accordingly, it was recommended that the PDP ‘be adopted, which would address the specific

training needs of port workers engaged in container terminal operations as well as improve the capability of the training centres, thus making a significant contribution to bring about the desired changes in employees' knowledge, skills and attitudes to the benefit of improved container handling performance'. Moreover, 'establishing safe and efficient ways of performing every operational activity would support the continuing investments in infrastructure and superstructure and would lead to the creation and subsequent maintenance of a safety culture throughout the container handling terminals (International Labour Organisation, 2006).

The port-worker development programme can be adopted by the Port of Ghana to improve the efficiency of the workforce. Congestion is another problem facing the Port and this can be addressed through the adoption of the programme. Ghana Ports and Harbours Authority already has a training centre and being the landlord it should be possible for them to improve the capacity of their training centres to be able to handle the PDP programmes.

Employers' commitment to human resource development

The investment most business make in physical and equipment capital far exceed the investment they are willing to make in the development of their workers (Carnevale, 1990; Reich, 1991). Lynch and Black (1996) argued that the research regarding employers' commitment to training, or lack thereof, is inconclusive. They note that existing data fail to provide such specific information on "...types of training ..., the relationship between formal schooling

and employer-provided training, who is receiving training, the links between investments in physical and human capital, and the impact that human capital investments have on the productivity of establishments”. However, the authors also noted some known facts about employer-provided training: Employers’ investment decisions are also influenced in part by the characteristics of the workers they employ. Employees who are perceived to have higher turnover rates are less likely to receive employer-provided training. At the same time, employees who have already shown an aptitude to learn new skills by having completed more years of schooling may then be more likely to receive additional human capital investments provided by an employer.

Lynch and Black (1996) found conflicting information regarding employer investments in training. They reported that some employers invest in physical capital instead of investing in skilled labour, while others perceived human capital investments as complements to physical capital. All employers, including those who invested heavily in training their employees, conceded that investing in human capital carries a cost and should be assessed in terms of the results seen in productivity.

The cost of training

Marges, the dockers Secretary of International Transport Federation, explained that it can be very costly not to train to the required standards because not to do so can lead to poor productivity, inadequate maintenance, unsafe working practices and dissatisfied and poorly motivated workforce – all of which

can prove to be very expensive in the long term. What has to be borne in mind is that training is not a cost but an investment, as is a new straddle carrier or Rubber Tyre Gantry (RTG) (Cargo systems, 2000).

Having said that, Marges is aware of a worrying trend in which 'training units in many ports are experiencing difficulties not only in keeping up with the details of technological change but also in providing the funds to finance the necessary training infrastructure. Funding (or the lack of it) and its emphasis on costs rather than quality has been causing a number of people to express concern at the number of poorly qualified 'trainers' that have appeared recently. Tempted by the money that can be made, a number of individuals have set themselves up as 'training consultants' and then begun to provide services that are often less than adequate. This has led to such concern among the more reputable training providers that there is even talk of regulating the training industry by establishing a global training standard which would be administered by an institute, although not a great deal of progress has been made with the idea so far (Cargo systems, 2000).

Impact of human resource development on productivity

Bishop (1993) acknowledges that training is a very important issue but described it as very difficult to study. Most training is informal in character and therefore hard to measure. Its effects on productivity are also difficult to quantify. Consequently, there have been few studies of the central issue of the impact of employer training on worker productivity. Research has, consequently, focused

on issues such as who gets formal training and the impact of formal training or tangential outcomes such as wage rates and turnover (Bishop, 1993:1)

Acknowledging the above caveats, the development of a company's human resources is a theme that numerous researchers and practitioners have identified as key to firms' increasing their productivity, while simultaneously narrowing the disparity between workers' skills and firms' present and future needs. "Businesses that have made training, education and development priority are seeing that it pays off through greater profitability and increased worker satisfaction" (Rowden, 1995, p. 365). Wholey (1990) found that formal on-the-job training positively affected job tenure and mobility. An emphasis on human resource development affects "performance, wages, turnover, and worker satisfaction.

Design management awareness training

The awareness training was well received. Many believed it helped to appreciate design management issues by expanding and clarifying their own ideas and covered the subject in a detailed and methodical way. Interviewees liked the open forum presentation style that allowed discussion of issues by all project team members. It also helped them work with the design management team and designers by explaining the benefits of practices/tools as well as explaining designers' needs and difficulties. This has helped to break down professional friction (or conflicts) that can hinder team working (Baldwin and Jarrett, 2002).

Over three-quarters of interviewees consider that their personal performance was improved by attending the awareness training. Several said it helped them to understand the design process, its issues and potential bottlenecks in detail; showed how to prepare a good design programme; and emphasized the need for the whole project team to respect the design freeze process. Almost half felt it positively affected project performance by getting the construction team to better understand design management and the whole team to question and improve project processes. Several suggested that design process improvements were difficult to identify as they were masked by the activities of other project members. For example, when a designer issued drawings early, subsequent procurement and construction activities were not ready to use the drawings – resulting in lost improvements. Also, several interviewees noted that designers were reluctant to plan the design in detail and the client was not respecting the design freeze process. Such examples illustrate the effect of departmentalism in sub-optimizing the design process in line with (Womack and Jones 1996) lean thinking and reinforces the findings of earlier work (Bibby et al., 2003) that design management can be significantly affected by the actions of others in the project system.

One comment repeated by several interviewees was that the mere presence of the researcher within the company had a positive impact on design management performance. By being a persistent champion for design management it raised the awareness of design management and acted as an impetus for change across the company. It may have also addressed a key

problem of training noted by Beer *et al.* (1993) that employees often become frustrated when their new skills go unused in an organization where nothing else has changed – thus undermining commitment to change. However, as the presence of the researcher has maintained the momentum of the change programme this has helped to address such barriers.

Several conclusions can be drawn from these observations. The awareness training has been successful in getting the project team to understand design management, to work with design management/design teams and has improved their personal performances. Also, the presence of the researcher within the organization has acted as an impetus for change. However, process improvements can be hidden by other project operations. Therefore, future projects should include the design team and client in awareness training, delivered at project startup and include agreed design management processes. This helps ensure a consistent process (Kagioglou *et al.*, 1998) and allows genuine involvement which is essential for introducing new ways of working (White, 1979). It is therefore a good strategy for addressing pre-application barriers. On the case study project, all parties commented on and agreed that the design management processes have helped to embed the practices and tools in the project processes.

According to Rothwell (1996), who used the term “human performance technology (HPT)” in his writing on the topic: Human Performance Technology, recognizes that human performance is influenced by many factors working separately and collectively. Performance is not solely the result of individual efforts to apply knowledge to work, which is the traditional (and often exclusive)

focus of employee training efforts. By the same token, training is no longer enough to help individuals and their organizations meet present challenges. Something more is needed. While training is no less important than it once was, it is not the only way to improve human performance (Rothwell, 1995).

In a publication for the American Society for Training and Development (ASTD), Bricker (1992) using the term “performance Technology (PT)”, also placed great emphasis on the importance of the organization within which the performance takes place and recommends a holistic approach in assessing and recommending ways to intervene. Typically, trainers and HR people assess learning needs, design, develop and deliver training and evaluate results. While all of these activities are associated with effective courses, the concept of performance improvement goes beyond the traditional activities that often depend upon training to be the only way to solve the problem and assume individuals’ responsibility to learning something new to fix a problem (Bricker, 1992).

A reflection of the related literature

- Human resource development has a long history originating as an apprenticeship programme in the 18th century in the USA;
- Though there is much disagreement about what constitute human resource development, literature reviewed indicates that it contributes to efficiency and productivity;
- Human resource development, which is an important factor when considering productivity improvement, should not be considered in

isolation, without linking it with other performance enhancing strategies;

- Training Professionals, therefore need to focus on how employees performances have improved following training and how it has contributed to the organisation's specific business goals;
- Training, done within a context, linked with or supported by other organizational strategic initiatives and managed as a process, can make a significant contribution to a firm's strategic planning and success;
- The International Labour Organisation (ILO) recognizes that increased productivity leads to reduction in poverty and supports activities relating to increased productivity;
- Effective human resource development programmes or training activities depend on the proper conduct of training needs analysis; The gaps identified between the knowledge, skills and attitude of employees forms the basis for the training activities. However, most organizations fail to conduct this exercise, in spite of its importance with the excuse that it is difficult, time consuming, expensive and lacks management support;
- Increased port productivity means minimizing the time ships spend in port by making port operations more mechanized; that is port operations should be more capital intensive. The huge investment in equipment and productivity and also to remain competitive, calls for education and training of port workers;

- The port worker development programme (PDP), an ILO programme with the support of International Transport Federation (ITF), is one such training programmes designed to bridge the training gap of port workers and improve performance. This programme was recommended to the Indian government by the ILO to solve operational inefficiency and serious problems of congestion facing the ports of India;
- Though it has been acknowledged that HRD or training is difficult to study and its effects on productivity difficult to quantify, businesses that have made training, education and development a priority are seeing the results in terms of greater profitability and increased worker satisfaction; and
- From related studies, it was indicated that performance improvement takes more than just training and that a holistic approach to training should be adopted within the organization. It concluded that employees who attended training programmes improved their personal performance.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter describes the study design, the procedure for data collection, techniques for sampling, research instruments and method for analyzing the data to answer the research questions.

Research design

Both quantitative and qualitative research methods were used to assess the effects of human resource development on productivity, focusing on two organizations in the Tema Port namely: Ghana Ports and Harbours Authority and Carl Tiedemann Stevedoring Company. This approach has been selected for this work because it would make it possible for the work to be very comprehensive. Quantitatively, the study has some data in the form of numbers from precise measurement and qualitatively, it has some data in the form of words from documents, observations and transcripts. In addition, quantitative analysis of data was done by using tables or charts and relating these to the research questions. On the other hand qualitative analysis of data was based on generalizations from the evidence and presenting a coherent, consistent picture (Neuman, 1994).

The study compared these two companies in terms of the kind of training programmes they have for their stevedoring staff, the educational level and the differences in their performance levels. The performance levels were assessed using the following variables:

- Ship productivity per ship/gang hour;
- Accident rate; and
- Labour productivity per gang hour.

Target population

Purposive sampling technique was used to select the two stevedoring companies out of the nine operating in the port because they are the best performing stevedoring companies in the port and are interested in training their staff as such, the researcher would like to compare their performance. This is evident from the observations made by the researcher and her colleagues over a period of about five years from November 2000 to December 2005.

The target population is the workers of two stevedoring companies in the port namely Ghana Ports and Harbours Authority (GPHA) and Carl Tiedemann Stevedoring Company. The companies were purposively chosen because they attach much importance to training and also because of the availability of information. Tema Port was also chosen because:

- Stevedoring operations take place only in the port industry and Tema port is the bigger of the two seaports in Ghana and a lot of stevedoring activities go on there; and

- Proximity to the researcher also influenced the choice of Tema Port.

The breakdown of the target population is as shown in Table 2.

Table 2: Breakdown of target population by category of staff

Staff Category	Ghana Ports & Harbours Authority		Carl Tiedemann Stevedoring Co.	
	Target	Selected	Target	Selected
Stevedore				
Manager/Superintendent	1	1	1	1
Traffic/Stevedore Officers	4	4	4	4
Traffic/Stevedore Supervisors	2	2	40	3
Foremen	2	2	20	12
Ship-Crane Operators	21	21	20	20
Dockers (casual)	84	25	60	18
Dockers (Permanent)	42	13	0	0
Forklift Operators	10	10	5	5
Total	166	78	153	83

Source: Field work (2007)

Sample size and sampling procedures

Statistically when the population size is 20 or less the difference in the sample size is insignificant. Therefore, the population size of 20 or less will remain the same for the sample size. According to Neuman’s (1994) format, for a

population size of the 1000, the researcher needs a sample size of 30 per cent, therefore, 30 percent of all the population sizes of above data gave us the sample sizes of all the categories. Simple random sampling technique was used to select the sample size from each category of the total population. In simple random sampling, a subset is chosen from a population. Each individual is chosen randomly and entirely by chance such that each individual has the same probability of being chosen to be part of the population to be used for study.

A total of 161 respondents were involved in the study; 78 for Ghana Ports and Harbours Authority and 83 for Carl Tiedemann. In GPHA, Ship-crane Operators, Dockers (permanent), Dockers (casual) and Forklift Operators forms what is called the integrated gang. In CTS, the integrated gang is made up of Headmen, Ship-crane operators, Foremen, Dockers, and Forklift Operators.

Research instruments

The instruments for data collection (Appendices A-C) were:

- Questionnaire
- Interview schedule
- Observation guide
- Focus Group Discussion guide

Data collection methods

Structured questionnaire was administered plus unstructured one-on-one interview with Managers and Supervisors to determine whether participants have

been able to transfer learning on the job. Focus group discussion was also used to gather information from the integrated stevedore gangs (These comprised of ship-crane operators, dockers, forklift operators, in the case of GPHA. With that of Carl Tiedemann, it comprised of headmen, ship-crane operators, foremen, dockers and forklift operators). This method was chosen because the nature of their job did not make it possible for one-on-one interview or the administration of questionnaires. Non-participant observation was also used to determine the speed of work and attitude towards safety on the job.

Data analysis

The data was checked, edited and coded manually but was entered into the Statistical Product and Service Solutions (SPSS) software, which facilitated the analysis. Data analyses of this study were partly based on the questionnaires given to the respondents. All open questions after the fieldwork were coded. The data collected were statistically analyzed and frequency tables were created from the data. Qualitatively the data obtained from the interview, observations and focus group discussions were also analyzed, looking for content and emerging themes.

Limitations of the study

Many problems were faced in the course of undertaking this study, which are common to many social science surveys. For the purpose of documentation, it

is necessary that they are mentioned here. Any study involving large population usually requires longer period of time and high cost to achieve the needed result.

Since all the respondents were involved in the stevedore operation at the Tema Port and the period of the fieldwork fell within their break time, it was not easy tracking them down for the interview to be carried out. Even some individuals refused to be interviewed because they felt the interview would take their whole leisure time. However, this situation was managed by trying to locate the respondents either at their places of relaxation or at their offices during the break time. Some of the workers initially refused to be interviewed because they suspected interviewer to be their inspector who might report their comments to their senior officers.

To end up this section on problems faced it would be necessary to mention that another limiting factor to the study was the time spent in conducting the interview especially with the workers. Since some of the respondents did not have much formal education, a lot of time was spent in explaining the questions for the interview to them. So instead of using about forty-five minute for an interview per respondent, in such instances as much as one hour or more was spent in most cases. Most of the problems encountered in the fieldwork were easily surmounted by using alternative measures such as visiting the respondents several times to obtain data and making effective use of the limited funds available to arrive at what was needed.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents results from the data analysis and their interpretation. The data collected for analysis were divided into five sections. These are personal data, educational background/training of stevedore gangs and productivity, training needs analysis, training and productivity, and accident rate.

The primary objective of the study was to assess the effect of human resource development on stevedore productivity by comparing two best performing stevedore companies in the Port. These are Carl Tiedemann (CTS) and Ghana Ports and Harbours Authority (GPHA).

The study sought information from different categories of staff of the two organizations under study. These are Stevedore Managers, Stevedore Superintendent, Stevedore Officers, Stevedore Supervisors, Foremen, Ship-crane Operators, Dockers (both casual & permanent), and Forklift Operators.

Socio-demographic background of respondents

Organisation

There were two categories of respondents: The Officers and Stevedore Gangs. A total of 17 answered questionnaires were collected from officers of the

two organizations. These are nine (9) for Ghana Ports & Harbours Authority and eight (8) for Carl Tiedemann Stevedoring, representing 53 percent and 47 percent of respondents respectively. There are only few officers at the stevedore section. The junior officers were operations staff working in the integrated gangs. Focus Group Discussion (FGD) method was used to collect data from the integrated gangs also referred to as the stevedores.

Designations

From the data collected, Ghana Ports & Harbours Authority and Carl Tiedemann have four (4) Stevedore officers representing 23 percent of the respondents. This gave a total of eight stevedore officers (100.0%) from both organizations. For stevedore supervisors, GPHA had two (11.8%) while CTS had three (17.6%). GPHA had no position for a Stevedore Superintendent but CTS had one (5.9%). GPHA had one (5.9%) position for Stevedore Manager but CTS had none. The Stevedore Superintendent of CTS and Stevedore Manager of GPHA have similar responsibilities but had different titles. GPHA had two (11.8%) Foremen while CTS had none. The Foremen in CTS formed part of their integrated gang whilst in GPHA they were not. These results were for the 17 respondents nine (52.9%) from GPHA and eight (47.1%) from CTS) who filled the questionnaires and were interviewed as well.

Another group of one hundred and forty-four (144) respondents were involved in the FGD sessions. These were the integrated gangs of the two companies. Twenty (20) sessions of the focus group discussions were held with

twenty (20) participants in each group. The integrated gangs of GPHA comprised: Twenty-one (21) Ship-crane Operators, thirty-eight (38) Dockers (both permanent and casual), and ten (10) Forklift Operators. CTS integrated gangs comprised of twenty (20) Headmen, twenty (20) Ship-crane operators, twelve (12) Foremen, eighteen (18) Dockers (mostly casuals), and five (5) Forklift Operators. Members of the integrated gangs were all males.

Age

The age distribution of the respondents who filled questionnaires ranged from 40 to 50 years and above as depicted in Table 3. In GPHA, only one (5.9%) respondent fell between the ages of 40-44, six (35.3%) fell between the ages of 45-49 and 2 (11.8%) were above 50 years. In CTS, 2(11.8%) respondent fell between the ages of 40-44, three (17.6%) between the ages of 44-49 and three (17.6%) are above 50 years.

Table 3: Age distribution

Age (Years)	Companies	
	GPHA	CTS
40 – 44	1 (5.9)	2 (11.8)
45 – 49	6 (35.3)	3 (17.6)
50 and above	2 (11.8)	3 (17.6)

Source: Field work (2007)

The breakdown indicates that the ages of most of the officers fell between 45-49 years which is a youthful group and they could work longer.

Educational background of Stevedore Officers

Respondents were asked to indicate the level of education they had. Table 4 is a presentation of the data gathered.

Table 4: Educational background

Level of education	Companies	
	GPHA	CTS
Sec/Com/ Tech Education	2 (11.8)	3 (17.6)
Post Sec. Education	1 (5.9)	1 (5.9)
Diploma Education	3 (17.6)	1 (5.9)
Bachelor Degree Education	1 (5.9)	1 (5.9)
Post Graduate Education CTS	2 (11.8)	1 (5.9)

Source: Field work (2007)

The study indicated that GPHA had 2 (11.8%) officers with secondary/commercial/technical education, 1 (5.9%) with post secondary education, three (17.6%) with diploma, one (5.9%) with bachelor degree and two (11.8%) with a masters degree. In CTS, three (17.6%) officers had secondary/commercial/technical education, one (5.9%) had post secondary education, one (5.9%) had diploma, 1(5.9%) had 1st degree and one (5.9%) had master’s degree. The two companies had quite highly educated officers in the

stevedore section. This finding confirmed the assertion by Marges (2000) the dockers' secretary of the International Transport Workers Federation (ITF) that education and vocational training are extremely important for the future development of the port industry and these are increasingly being recognized and used as instruments to improve not only the quality of the enterprises which are providing the port services but also their competitiveness (Cargo Systems, 2000).

Length of service of Stevedore Officers

This section tried to determine the length of service of respondents. The length of service ranged from one (1) year to twenty-six (26) years and above. Respondents were asked to indicate which of the categories (1-5, 6-10, 11-15, 16-20, 21-25 and 26 years and above) they fitted in. Their responses are indicated in Table 5.

Table 5: Length of Service of Officers

Length of service (years)	Companies	
	GPHA	CTS
1 – 5	0 (0.0)	4 (23.5)
6 – 10	0 (0.0)	1 (5.9)
11 – 15	0 (0.0)	0 (0.0)
16 – 20	2 (11.8)	2 (11.8)
21 – 25	5 (29.4)	0 (0.0)
26 +	2 (11.8)	1 (5.9)
Total	9 (53.0)	8 (47.1)

Source: Field work (2007)

The results show that 2 (11.8%) from GPHA had worked for 16-20 years, five (29.4%) between 21-25 years and two (11.8%) had worked for more than 26 years. In CTS, four (23.5%) respondents had worked between 1-5 years, one (5.9%) had worked between 6-10 years, two (11.8%) had worked between 16-20 years and one (5.9%) respondent had worked for over 26 years.

The data shows that officers in GPHA had worked longer at the stevedoring section and were more experienced than those in CTS. This might be due to the fact that CTS is a much younger company than GPHA. Since there is no formal school for training prospective dockworkers, on-the-job training remains the best way to learn about stevedore operations. As DeSimone and Harris (1998) pointed out, learning to do one's job was taught by men experienced in their respective trades. The people with the long service on the job were therefore, well experienced and they passed on their knowledge to the new and younger generation.

Educational background of the Stevedore Gangs

The Junior Officers who formed the bulk of the stevedore gangs who were mostly foremen and supervisors had a minimum educational level of Middle School Leaving Certificate and a maximum of Senior Secondary or Technical School Certificate.

In assessing the educational background of the stevedores, through the questionnaire, the respondents who were the officers indicated the educational level of the Stevedore Gangs engaged in their establishment as shown in Table 6.

Table 6: Level of education of the Stevedore Gangs

Level of education	Companies	
	GPHA	CTS
Senior Secondary School	4 (23.5)	3 (37.5)
Junior Secondary School	1 (5.9)	0 (0.0)
Middle School	0 (0.0)	3 (37.5)
Total	5 (29.4)	4 (39.5)

Source: Field work (2007)

According Table 6, four (23.5%) respondents from GPHA indicated that the level of education of the stevedore gangs was Senior Secondary School and one (5.9%) indicated Junior Secondary School. In CTS, three (37.5%) stated Senior Secondary School level and another three (37.5%) stated Middle School level.

This finding gives the indication that there are highly educated dockworkers in both GPHA and CTS. This means that the average modern day dockworker is more educated compared to 1986 when the manpower audit was carried out by the Hamburg Port Training Institute (HPTI) GmbH, which showed that the dockworkers were primary and middle school level graduates with most of them not educated at all (Hamburg Port Consulting, 1986).

This finding gives the indication that there are more educated dockworkers in both GPHA and CTS. This means that the average modern day dockworker is more educated compared to 1986 when a manpower audit carried out by the Hamburg Port Training Institute (HPTI) GmbH in the Port indicated that the

dockworkers were primary or middle school level graduates with most of them not educated at all (Hamburg Port Consulting, (1986). This finding, however, contradict the views that in developing countries basic education is often lacking (Cargo Systems, 2000).

Orientation to Stevedores before start of work

Orientation programme is designed to welcome and orient new staff members to the organization. It provides them the opportunity to acquaint themselves with the work environment and to know the vision and mission of the organization. It also provide the platform to educate them on important policies and procedures of the organization, their rights and responsibilities and provide information about their benefits, entitlements, pay and the programmes run in the organization.

Respondents were asked to indicate 'Yes' or 'No' to the question whether casual stevedores were given orientation before the start of work. In GPHA, eight (47.1%) respondents indicated 'yes' and one (5.9%) indicated 'no'. In CTS, one (41.2%) indicated 'yes' and there was no indication for 'no'. The responses indicated that both companies give orientation to the stevedores before the start of work. This was confirmed by the Stevedore Manager in an interview that the stevedores were given what was called the 'Toolbox room talk'. The stevedore gangs also confirmed this during the focus group discussion.

The question "What kind of orientation do you give them?" was asked to determine exactly the contents of the orientation given to the causal stevedores

and to ascertain whether it helped them to work well. The responses given indicated that the casual stevedores received orientation on the nature of cargo as well as safety of cargo and personal safety. Some responses from GPHA, one (5.9%) respondent indicated that the stevedores were given orientation on the 'dos and don'ts of the job for a successful operation'. Another one (5.9%) indicated the orientation was on the nature of cargo to be handled and the care to be taken. Three (17.6%) indicated they gave orientation on safety issues relating to the cargo. Two (11.8%) indicated that the whole gang was given an overview of what was expected of them. One (5.9%) indicated that the stevedores were given introduction to stevedoring operations and there was no response from one (5.9%) respondent. From CTS, two (11.8%) indicated they educated the stevedores on the dos and don'ts on the job for a successful operation. Two (11.8%) indicated they gave orientation on the nature of cargo and the care to be taken and one (5.9%) said the orientation was on the nature of work. While three (17.6%) did not indicate any response. These responses were confirmed by the dockworkers during the focus group discussion sessions.

Giving training, whether in the form of orientation, is very important to help employees do their jobs well. As was noted in the study of Rowden (1995) when employees receive adequate education on how to do their jobs, it leads to high morale and ultimately, higher productivity.

Skills of casual labourers in Stevedore operations

To ascertain whether the casual labourers engaged were experienced to take up the stevedore operations, the officers were asked the following question: “Are casual labourers engaged skillful enough to perform stevedore operations?”

From GPHA, five (29.4%) indicated ‘yes’ and four (23.5%) indicated ‘no’. From CTS, eight (47.1%) indicated ‘yes’. There was no indication for ‘no’. It was indicated that GPHA went beyond orientation and invested in training the casual labourers whether they were skillful or not. CTS on the other hand depend entirely on the Dock Labour Company to select the labourers they think were skillful and gave them a general idea about the cargo they were to handle. This, perhaps, is an indication that private companies are not interested in investing in training casual stevedores.

The reason was to explain why they thought or suspected that some or all the dockworkers hired for stevedore work were not skillful enough. From GPHA, four (23.5%) indicated that not all dockworkers had basic knowledge in stevedoring and some were not very experienced. Five (29.4%) did not give any response. There were no responses to the question from CTS. This gave the impression that they assumed the casual dockworkers were skillful enough.

The findings indicated that both companies gave some kind of training (mostly in the form of orientations with regard to the job to be done) to the stevedore gangs most of whom were casuals but lacked the commitment to really invest in the development of their skills in cargo handling. This was determined by the characteristics of the casual stevedore gangs. They could leave the job or

decide to work for another company any time they wanted. As noted by Lynch and Black (1996), employers' investment decision is influenced partly by the characteristics of the workers they employ. If they are perceived to have high turnover rate, they are less likely to receive employer-provided training. Employers concede that investing in human capital carries a cost and should be assessed in terms of the results seen in productivity.

The impact of orientation on performance

To ascertain what impact orientation had on the performance of the dockworkers, the officers were asked to indicate 'To a very large extent', 'to some extent' and 'to no extent'.

The responses are presented in Table 7.

Table 7: Impact of orientation

Impact of orientation	Companies	
	GPHA	CTS
Very large extent	6 (35.3)	8 (47.1)
Some extent	3 (17.6)	0 (0.0)
Total	9 (52.9)	8 (47.1)

Source: Field work (2007)

The results show that six (35.3%) officers of GPHA indicated orientation had impact on performance while three (17.6%) stated the impact was to some

extent. In CTS, all the eight (47.1%) officers stated that to a very large extent, orientation had an impact on performance.

The responses indicated that training in whatever form really do impact on performance. As the dockworkers themselves confirmed, quoting one of the participants:

“It is very important and helpful without that how can we handle goods or how can you handle human beings. But for the orientation we had gone through, we were able to cope with the situation and also control the guys effectively”.

To establish whether orientation was the only training given to the dockworkers or there was a formal training for them in stevedore operations, the officers were asked to indicate ‘yes’ or ‘no’ to the question whether there was other trainings apart from orientation.

Information gathered from GPHA and CTS indicated that the majority of the officers confirmed that there were other trainings apart from orientations. From the responses, apart from orientation, formal training sessions were also organized for the dockworkers.

Kinds of training provided to workers

This question was asked to identify whether the training was on the job or off-the-job since there was no known school for stevedore operations. The responses are stated in Table 8. According to Table 8, in GPHA six (35.3%) indicated the training was on-the-job and two (11.8%) said it was off-the-job. One

(5.9%) respondent indicated nothing. For CTS, seven (41.2%) out of eight respondents indicated ‘on-the-job training’.

Table 8: Kinds of training provided

Training provided	Companies	
	GPHA	CTS
On-the-job	6 (35.0)	7 (41.2)
Off-the-job	2 (11.8)	0 (0.0)
Total	8(46.8)	7 (41.2)

Source: Field work (2007)

It appeared both organizations conducted on-the-job training for the workers. This is because the training is practical and there is no workshop for simulation exercises. Those that were done off-the-job were mostly theoretical after which the practical work is done on-the-job.

Application of the knowledge, skill and attitude acquired to the job

To remain vital in today’s competitive global market, companies need well developed workforces. The employees employed must be willing to learn and possess the ability to put their knowledge to work in new and effectively ways. Employees need the skills that allow them to move not only vertically within a company but horizontally throughout their careers. There is also the need for the company to instill positive work attitudes in the employees that allows them to satisfy their personal and work lives.

The question was asked to find out whether there is transfer of knowledge acquired unto the job. Seven (41.2%) of the nine respondents from GPHA indicated to 'to a very large extent' and two (11.8%) indicated 'to some extent'. For CTS, all eight (47.1%) respondent indicated 'to a very large extent'. From the findings, the knowledge and skills acquired are directly related to the job and therefore, to a large extent they were able to apply them naturally.

Effect of application of knowledge on the level of output

The intention here was to find out how application of knowledge had affected output. Five (29.4%) indicated that targets set for completion of cargo handling were achieved and sometimes exceeded. One (5.9%) person indicated there was reduction in cargo damage. Another one (5.9%) respondent said there was reduction in the accident rate. Two (11.8%) respondents gave no response. Data collected from CTS, Two (11.8%) said there was increased supervision from foremen. One (5.9%) indicated there was reduction in cargo damage. Four (23.5%) of the respondents did not respond.

From the responses, it was established that because of the direct application of the skills acquired both companies experienced among other things a reduction in the damage to cargoes. The interaction with the integrated gangs during the focus group discussions indicated that they were very satisfied when they worked and there was no accident to humans and cargoes. These findings confirmed the findings of Wholey (1990) that formal on-the-job training

positively affected job tenure and mobility. An emphasis on human resource development affects “performance, wages, turnover, and worker satisfaction”.

The conduct of training needs analysis

In determining whether training is the result of training needs analysis, respondents were asked to indicate ‘yes’ or ‘no’ to the question whether they conducted training needs analysis. From the data collected, eight (47.1%) from GPHA indicated ‘yes’ and one (5.9%) indicated ‘no’. From CTS, six (35.3%) indicated ‘yes’ and two (11.8%) indicated ‘no’. So the two companies indicated that they conducted training needs analysis.

How training needs analysis was conducted

In order to know exactly how training needs were conducted, eight (47.1%) respondents from GPHA and six (35.3%) from CTS said training needs were done through observation while one (5.9%) from GPHA and two (11.8%) from CTS did not respond.

The Stevedore Officer indicated in an interview that training needs were determined according to the new types of cargoes coming into the port and the new technology and skills needed to handle them. In this case the dockworkers are trained to meet the current demands of the job. He said they also observed the way they worked and interacted with them to determine the training need. Basically it was identified that the two companies conducted training needs analysis through observations. Even though needs assessment is done through

observation, it cannot be said that it is thoroughly done. As indicated by DeSimone and Harris (1998), a complete needs analysis involves measuring a variety of factors at multiple levels of the organization.

Respondents were further asked to indicate if Training needs Analysis was actually conducted. This is because it is assumed that organizations usually do not conduct training needs analysis because they think it is time wasting and expensive. Only one (5.9%) respondent from GPHA and two (11.8%) stated that training needs analysis were not conducted because dockworkers were hired from Ghana Dock Labour. The rest eight (47.1%) from GPHA and six (35.3%) from CTS gave no response.

Relationship between training needs identified and the training programme designed for the Stevedore workers

In order to establish whether the training given to the dockworkers was based on training needs identified, seven (41.2%) and six (35.3%) respondents from GPHA and CTS respectively, confirmed it, while two (11.8%) and one (5.9%) gave no response.

This confirmed the fact that since both companies do their training needs analysis through observations, the training programmes they designed were directly related to what they saw and identified as training gaps.

To establish the relationship between training needs identified and training programmes, respondents were asked to describe the relationship. From data collected, five (29.4%) from GPHA and four (23.5%) from CTS stated that

because the dockworkers were assessed before the kind of training was designed, it was usually specific to the needs identified. One (5.9%) each from GPHA and CTS were of the view that since it was GDLC who employed the dockworkers, they would know the relationship between the training needs identified and training programmes. One (5.9%) each also from GPHA and CTS said it was directly related and two (11.8%) from both organizations did not give any responses.

Interacting with the dockworkers on the relationship between the training programmes and the training needs identified, they were of the opinion that once the programmes helped them to overcome some operational difficulties, the programmes were specific to the problems they had.

Improving the performance of Stevedores through training

The primary objective of the study was to establish whether training had effect on performance. Therefore a question asked on whether training had improved the performance of the stevedores. Respondents were expected to give 'yes' or 'no' answers to this question. Nine (52.9%) respondents from GPHA and seven (41.2%) from CTS confirmed that training had improved performance in stevedore operations. Only one (5.9%) respondent from CTS indicated no response.

The Stevedore Manager of GPHA gave an example of how training had improved the performance of the stevedores by citing the handling of the Gas Pipe Lines by the GPHA stevedores. He said because the stevedores were given a

very intensive training before the operations they far exceeded the target and achieved a very quick ship turn around time. This experience, he said had been translated to subsequent operations. The stevedores confirmed during the FGD that their performance after the training had improved greatly and accidents have also reduced drastically.

This finding supported what Rowden (1995) said that businesses that have made training, education and development a priority are seeing that it pays off through greater profitability and increased worker satisfaction.

Indicators used to measure performance

Respondents were asked to specify by what parameters performance was measured. About 6 (35.3%) respondents from GPHA and 3 (17.6%) from CTS stated that performance is measured by reduction in accidents. Some 1(5.9%) respondent from GPHA stated that effective utilization of resources is an indicator used to measure performance. While 1 (5.9%) respondent each from GPHA and CTS stated that the indicator used were hourly and ship productivity figures. about 1 (5.9%) respondent from GPHA and 4 (23.5%) indicated no response to the question.

Table 9 compared the performance indicators of the two companies for the period 2004-2005 in terms of ship and labour output/productivity.

Table 9: Comparison of performance indicator of the companies

Ship Productivity	Containers			
	CTS		GPHA	
	2004	2005	2004	2005
Boxes per ship hour in Port	6.81	7.90	8.11	7.68
Boxes per ship hour at Berth	11.34	11.90	13.37	11.79
Boxes per ship work hour	13.71	13.18	14.89	13.03
Boxes per ship work day	329.03	264.03	357.35	260.95
Labour Productivity				
Boxes per gross gang hour	9.60	5.69	10.55	5.89
Boxes net gang hour	11.60	7.85	12.70	8.16
Boxes per gross man hour	0.06	0.02	0.06	0.02
Boxes per net man hour	0.07	0.03	0.08	0.03
Conventional Cargo				
Ship Productivity				
Tonnes per ship hour in Port	37.57	41.88	42.81	36.15
Tonnes per ship hour at Berth	60.42	68.39	68.54	52.66
Tonnes per ship work hour	117.36	105.42	88.58	89.23
Tonnes per ship work day	2816.61	1676.34	2125.93	1354.68
Labour Productivity				
Tonnes per gross gang hour	41.60	38.30	37.65	45.14
Tonnes per net gang hour	44.09	41.29	41.67	52.16

Table 9: (Continued)

Tonnes per gross man hour	0.03	0.02	0.03	0.06
Tonnes per net man hour	0.03	0.02	0.03	0.07
Multipurpose Vessels				
Ship Productivity				
Tonnes per ship hour in Port	32.35	46.48	56.31	50.53
Tonnes per ship hour at berth	73.68	87.42	96.86	86.19
Tonnes per ship work hour	94.98	100.70	119.71	100.52
Tonnes per ship work day	2279.61	2053.57	2873.04	1929.40
Labour Productivity				
Tonnes per gross gang hour	60.16	42.51	78.61	56.29
Tonnes per net gang hour	77.32	56.02	84.85	65.05
Tonnes per gross man hour	0.27	0.11	0.19	0.16
Tonnes per net man hour	0.29	0.14	0.20	0.19

Source: GPHA Monitoring & Control Department (2007)

The table shows different figures for ship and labour productivity under the three different categories of cargoes being handled. (i.e containers, conventional cargo and multipurpose vessel). The factors that directly relate to stevedoring performance for ship productivity are the boxes/tonnage per ship work hour and for labour productivity, boxes/tonnage per gross man hour.

For container handling, CTS showed positive variance of 0.53 in ship productivity for 2005 while GPHA showed positive variance of 1.86 for the same period. Labour productivity for CTS and GPHA showed the same positive

variance of 0.04 in 2005. This means that both companies had improved ship and labour productivity in 2005.

Ship productivity under conventional cargo for CTS showed positive variance of 11.94, while GPHA showed a negative variance of 0.7. For labour productivity, CTS showed positive variance of 0.01 while GPHA showed negative variance of 0.03.

For multipurpose vessel handling, CTS showed a negative variance of 5.72 in ship productivity for 2005, while GPHA showed a positive variance of 19.19 over the same period. For labour productivity, CTS showed positive variance of 0.16 while GPHA also showed positive variance of 0.03. This means that both companies showed improvement in labour productivity but GPHA had a better turn around time in 2005 than CTS.

Other factors influencing the performance of the Stevedores

To establish whether or not training was the only factor that influenced performance, eight (47.1%) respondents each from GPHA and CTS stated that other factors apart from training influenced the performance of the stevedores. Rosenberg (1996) stated that though training plays a key role in the development of high-performance workers and corresponding increases in productivity, it is certainly not as effective as when it is combined with other performance-enhancing strategies. Performance improvement goes beyond training by not only focusing on the analysis of job-related performance, but also by identifying the underlying causes of the performance in question.

Respondents were asked to state what other factors apart from training influenced performance. From data collected, one (5.9%) respondent from CTS attributed the other factors to 'attitude to work', another one (5.9%) attributed it to 'health status', three (17.6%) attributed it to 'type and characteristics of vessel', two (11.8%) attributed it to 'motivation of stevedores' and one (5.9%) to 'economic situation in the country'. From GPHA, one (5.9%) respondent stated 'type of cargo', one (5.9%) stated 'type and characteristics of vessel', two (11.8%) stated 'availability of suitable equipment', two (11.8%) stated 'motivation of stevedores', one (5.9%) stated 'supervision', while two (11.8%) gave no response.

From the responses, it was obvious that training alone cannot improve performance. Other factors as indicated above also affect performance. Observing two groups of stevedores working on two different types of cargo confirmed that the type of cargo can also affect the ship turn around time. For example, the group working on containers worked faster than the group working on bagged cargo. This was because extra care had to be taken not to damage the bagged items being handled.

Morale of Stevedores after training sessions

The result of the study showed that six (35.3%) respondents from GPHA and five (29.4%) from CTS were of the view that they were very highly motivated by training while three (17.6%) each from GPHA and CTS stated 'moderately high'.

The findings suggest that training not only improve performance but also motivates workers. It is the motivation that leads to high performance. Most of the stevedores who benefited from the intensive training felt very motivated and worked very hard to finish the vessel before the targeted time. This finding again confirmed that when workers are given training to do their jobs, their morale is high and ultimately is translated into higher productivity (Rowden, 1995).

Frequency of Stevedores involvement in accident

Accident rate was one of the ways to measure the effect of training on productivity in stevedore operations. The respondents were asked to indicate 'very often', 'not too often' or 'not at all'. The study showed one (5.9%) respondent from CTS stated 'very often' and seven (41.2%) stated 'not very often'. Nine (52.9%) respondents from GPHA stated 'not very often'.

These responses perhaps were based on the current trend of activities. In an interview with the Stevedore Officer on the accident rate he stated that when they started engaging the casual stevedores from 2002, they experienced a high rate of accidents but with training and proper orientation, this has reduced drastically. The stevedores themselves confirmed this during interactions with them.

To establish whether training has helped to reduce accidents among the stevedores, seven (41.2%) of respondents from GPHA and the same number from CTS indicated 'to a large extent' and one (5.9%) respondent each from CTS and

GPHA also indicated ‘to some extent’, while one (5.9%) respondent from GPHA indicated no response.

The Table 10 compared the accident rates of the two companies for the period 2003-2006 in terms of ship and labour output/productivity.

Table 10: Accident Statistics: 2003-2006

Companies	2003	2004	2005	2006
CTS	3	4	2	9
GPHA	12	2	4	1
Total	15	6	6	10

Source: GPHA Fire/Safety Department (2007)

The accident statistics indicated that GPHA’s accident rate have reduced over the years compared with CTS. This could be attributed to the vigorous training given to the stevedores. The dockworkers who benefited from trainings organized by GPHA confirmed that they had experienced less accident after their training than it had been before then. As noted by Marges (2000) the dockworkers Secretary of ITF, without a trained operator a US\$6million gantry crane, will at best be under utilized and at worst be a positive danger (Cargo Systems).

Stevedores wearing the correct protective clothes

A question was asked to find out whether accidents occurred because stevedores did not wear the correct protective clothes. The responses to this question are displayed in Table 11.

Table 11: Accidents due to non-wearing of correct protective clothes

Respondents	Company	
	GPHA	CTS
Yes	5 (29.4)	5 (29.5)
No	2 (11.8)	3 (17.6)
No response	2 (11.8)	0 (0.0)
Total	9 (53.0)	8 (47.1)

Source: Field work (2007)

From the results in Table 11, about five (29.4%) respondents from GPHA and five (29.4%) from CTS indicated 'yes'; two (11.8%) from GPHA and three (17.6%) from CTS indicated 'no'; two (11.8%) from GPHA did not respond to the question.

Interaction with the dockworkers during the focus group discussion confirmed that they sometimes did not wear protective clothes. Even if they did wear them they were not the right ones. Watching the dockworkers during one of their operations it was observed that some of them were not wearing the correct protective clothes. Some were just wearing ordinary shoes instead of safety

boots. Others were also not wearing reflective jackets which were very important in the environment in which they were working.

Respondents were asked to explain why some stevedores did not wear the correct protective clothes. Out of the three responses had from one (5.9%) stated that some did not wear it because they did not have one for themselves. One (5.9%) respondent said the weather condition did not permit the wearing of full protective cloth and the other one (5.9%) stated that some of the stevedores just did not want to wear them. However, six (35.3%) indicated no response. From CTS, one (5.9%) respondent stated that some of the stevedores did not have protective clothes, two (11.8%) stated they were not supplied, one (5.9%) stated that the stevedores claimed the protective clothes disturbed their work.

The dockworkers confirmed during the focus group discussion that they were not supplied with the protective clothes by the hiring companies and they could not afford one for themselves. Others stated they were not comfortable wearing them.

These excuses have led to many dockworkers not wearing the required personal protective (PPE) and there seemed to be laxity in the enforcement of wearing of them.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter concludes the study and presents the remaining issues by summarizing the study, followed by the major findings, draw some conclusions and end with recommendations.

Summary

As has been stated earlier, human resource development is very critical to an organization's survival. It is the development of skills and efficiency of the existing and potential manpower to improve productivity. With increasing globalization, it is increasingly appreciated that productivity improvement is crucial to a country's competitiveness and its integration into the global economy.

The primary objective of the study was to establish the effects of training or human resource development on stevedore productivity at Tema Port. The idea was to compare the performance of two best performing stevedore companies. Various definitions were used to explain human resource development and productivity.

Extensive literature was reviewed which considered the historical background of employee training, conceptual definitions of human resource

development and productivity, needs assessment, training and productivity, case studies of effect of human resource development on productivity, value of education and training in stevedoring operations and training as a component of performance improvement among others.

The researcher used quantitative and qualitative sources and methods were used to make the work very comprehensive. Questionnaires, interviews, focus group discussion and observation were used for the data collection. The questionnaires and the interviews for the managers and the supervisors were used to be able to get in-depth information about how training has affected productivity. The focus group discussion was used for the integrated group due to the nature of their work and also to get spontaneous responses that gave more information from their point of view. Twenty (20) sessions of the focus group discussions were held with twenty (20) participants in each group. The proceedings were tape recorded with the permission of participants. These were later transcribed. Observation was used to see at first hand the speed of work and the attitudes of the integrated gangs on the ground. A total of 161 respondents were used as sample for the study. Seventy-eight workers from GPHA and eighty-three workers from CTS of different categories were used for the study.

The major findings are:

- The main effects of training on stevedore productivity and other equally important factors which complement training to enhance stevedore productivity.

- To a large extent, there is a positive relationship between human resource development and productivity. The testimony by the stevedore gangs during the FGD that they exceeded their target when they were given training before they handled the gas pipelines, confirmed this.
- The literacy rate among the stevedores of both companies is very high with the exception of very few who were mostly elderly people in the integrated gangs. The current generation of the stevedores has at least basic education. The top officers have at least a second degree and the gangs were made up of senior secondary school or technical school leavers. This is contrary to the view held that stevedores were mostly uneducated. The current levels of education among the stevedores in Tema Port were higher than it was in 1986.
- Though the observed improvement cannot be wholly attributed to training activities over the years, training cannot be ruled out entirely. An example was given about the handling of the West African Gas Pipeline by the GPHA stevedores. Because the stevedores were taken through an intensive training section before the operations they worked ahead of the targeted days and it was accident free operation. The stevedores confirmed that this experience they had as a result of being trained for the gas pipeline operation has helped them to work better on other vessels as well and thereby improving their productivity levels.

- Comparing how both companies conduct their training needs analysis, it was established that both GPHA and CTS conduct training needs analysis by observing the way the stevedores work. GPHA went further by determining training needs by the type of new cargoes that come into the port and the technology needed to handle them.
- The study also found that to a large extent the knowledge skills and attitudes acquired by the stevedores from the trainings were transferred directly on the job. To others, this was because the training programmes were specific to the needs identified. This had resulted in low accident rate, increase in the morale and confidence level of the stevedores because the application of the skills, knowledge and attitude have helped them to work better.
- It also emerged that though training has influenced stevedore productivity in the port, to a large extent, and other equally important factors, have also contributed to improved stevedore productivity. These are types and characteristics of vessels, type of cargo and the availability of suitable equipment to handle them, proper supervision and attitude to work.

Conclusions

The value of training or human resource development in the workplace as indicated in the study cannot be under estimated. Many researchers have studied

and written about the benefits that accrue to both employers and employees when employees have continual opportunities to learn how to do their jobs better;

The study answered the research question formulated to establish the relevance of the training programmes to the training needs of the dockworkers, the relationship between the training needs analysis and training programmes designed for the dockworkers, the opportunity to transfer the knowledge, skill and attitudes on to the job by the dockworkers, whether the transfer of the acquired knowledge, skill and attitude on to the job reflect on the output level, the relationship between training and productivity, and other factors that influence the level of productivity other than training.

Recommendations

Since stevedoring is one of the cardinal activities of a port and the fact that Tema port is gearing up to be the most preferred port in the sub-region, much attention should be paid to how stevedores or dockworkers are trained to improve their skills and performance. It is therefore, recommended that:

- Since there is no known institution for training dockworkers, the port authority, i.e. GPHA should consider putting in place a training school to train prospective dockworkers where they would be taken through the theory and the practical aspects of stevedoring to help them have a better understanding of stevedore operations. This is a better way than learning only from the old hands who could pass on the wrong skills and attitudes as well;

- Simulation exercises should be part of the training programmes in order to create the desired confidence in the dockworkers to handle real situations;
- Stevedoring Companies should make efforts to attract more educated people to the stevedore operations in view of global changes in terms of computerization, affecting stevedoring operations;
- The Stevedoring Companies in the Port engaging the services of the stevedores should insist on the correct wearing of safety clothes to ensure safety at the Port.

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APPENDIX A

SAMPLE QUESTIONNAIRE

SECTION A: PERSONAL DATA

Please indicate your

(1) Organization

1. Ghana Ports and Harbours Authority []

2. Carl Tiedemann Stevedoring Com. []

(2).Designation post).....

(3) Your age

Please tick the appropriate age group

1. 20 – 24 years []

2. 25 – 29 years []

3. 30 – 34 years []

4. 35 – 39 years []

5. 40 – 44 years []

6. 45 – 49 years []

7. 50 years and above []

4. Your Highest Professional / Educational Qualification?

10. Post-graduate or equivalent []

9. First degree or equivalent []

8. Diploma []

7. Specialist []

6. Post – Secondary []

- 5. Secondary/Comm/Tech. []
- 4. Cert 'A' 4 year []
- 3. Middle School []
- 2. Primary School []
- 1. No formal Education []

5. How long have you been working in with this Organization?

- 1. 1 – 5 years []
- 2. 6 – 10 years []
- 3. 11 – 15 years []
- 4. 16 – 20 years []
- 5. 21 – 25 years []
- 6. 26 years and above []

SECTION B: EDUCATIONAL BACKGROUND/TRAINING OF STEVEDORE GANGS AND PRODUCTIVITY

(6) What is the educational level of the Stevedore gangs you engage?

- (a) Senior Secondary School []
- (b) Junior Secondary School []
- (c) Middle School []
- (d) Primary School []
- (e) No education []
- (e) Any other specify

(7) Are casual labourers engaged to do stevedoring work?

Yes [] No []

(8) Are the casual labourers given orientation before they start work?

Yes [] No []

What kind of orientation do you give them:

.....

(10) Are casual labourers engaged to do stevedoring work skillful enough to perform stevedore operations?

(11) If No. why?

(12) To what extent has the orientation impacted on their performance?

(1) To a very large extent []

(2) To some extent []

(3) To no extent []

(13) Are all workers given training after the orientation?

Yes [] No []

(14) If yes what kind of training:

(a) On the job training []

(b) Off the job training []

(15) To what extent are they able to apply the knowledge, skill and attitude to the job?

(a) To a very large extent []

(b) To some extent []

(c) To no extent []

(16) How does the level you have selected reflect in the level of output?

.....
.....

SECTION C: TRAINING NEEDS ANALYSIS

(17) Do you conduct training needs analysis?

Yes [] No []

(18) If yes, how?

(a) By observation []

(b) By asking the gangs []

(c) Any other specify

(19) If No, why?

(20) Is there a relationship between training needs identified and the training programmes designed for the stevedore workers?

Yes [] No []

Describe this relationship

SECTION D: TRAINING AND PRODUCTIVITY

(21) Has training improved the performance of stevedores?

Yes [] No []

(22) If Yes, by what indicators do you measure performance?

.....

(23) Do other factors influence the performance of the stevedores other than training?

Yes [] No []

(24) If Yes, what are they?

.....

(25) How would you describe the morale of stevedores after a training session?

(a) Very high []

(b) Moderately high []

(c) No change []

SECTION E: ACCIDENT RATE

(26) How often do stevedores get involved in accident?

(a) Very often []

(b) Not too often []

(c) Not at all []

(27) To what extent has training helped reduce accident among stevedores?

(a) To a very large extent []

(b) To some extent []

(c) To no extent []

(28) Do stevedores wear the correct protective clothes?

Yes [] No []

(29) If No, Why?

APPENDIX B

FOCUS GROUP DISCUSSION GUIDE FOR STEVEDORE STAFF

1. Are you casual/permanent employees?
2. How were you selected to work as stevedores?
3. What exactly do you do as individuals? Do you do the same job?
4. Are you given any orientation before you start work?
5. Do you have any training after the orientation?
6. What kind of training are you given?
7. If yes, how often are you trained?
8. How has the training or orientation helped you in the performance of your duties?
9. Do you find your job dangerous?
10. Do you work with protective clothes?
11. What in your opinion can be done to reduce the risk on the job?
12. Do you think the training/orientation you receive help you to do your jobs better?
13. Explain how
14. Are you given the opportunity to practice the new things you learn after training?
15. If No, why?
16. If Yes, do you think it has increased your rate of work and reduced accidents?
17. How long does it take you to finish work on one vessel?

18. What do you think about training stevedore staff?

QUESTIONS FOR THE STEVEDORES WHO HANDLED THE GAS PIPES

1. I understand your group handled the gas pipes for the West Africa Gas Pipes Project. How did you find the job? Was it difficult?
2. Were you given any training before the assignment?
3. If yes, what kind of training were you given?
4. Mention some of the courses you were taught.
5. How long did it take?
6. In your opinion, do you think you could have done the work anyway, without training? Do you think the training was necessary before the project?
7. When you compare your performance on the handling of the gas pipe, compared with other times when you handled goods without training, would you say your performance has been better than those times?
8. How long did it take you to work on the vessel carrying the gas pipes?
9. What other things do you think have helped you or would have helped you perform better apart from the training you received?
10. If yes what are these?
11. How important do you think training is to your job?

12. Tell me sincerely, do you think training has any effect on your performance?
13. If yes, how? And if no, how?

APPENDIX C

SAMPLE OBSERVATION GUIDE

1. Reporting time of the stevedores to work
2. Preparation before the start of work
3. The kind of instructions they receive
4. The kind of safety measures put in place
6. Whether there is any orientation or briefing
7. Attitude of stevedores towards safety
8. Knowledge about the work
9. Speed of work
10. The actual time spent on the job vis a vis the the expected time

APPENDIX D

SAMPLE INTERVIEW GUIDE FOR MANAGERS/SUPERVISORS

1. I understand that though you are a stevedoring company, you do not have permanent stevedoring employees. Your permanent stevedoring staff are made up of stevedoring supervisors, officers and superintendent. Why is it so?
2. What is the composition of a typical stevedoring gang?
3. What are the skills and competencies you expect to find in a particular Stevedore gang.
4. How are you able to determine the technical skills and competencies of the gangs before you assign them to work?
5. If they do not meet your expectation how do you handle them to ensure maximum performance?
6. Do you give them any orientation?
7. How do their performances affect your operations and productivity?
8. How do you train the stevedore gangs?
9. Do you find it necessary for the stevedore gangs to be trained?
10. If yes, are they being trained?
11. If no, why?
12. How do you determine the training needs of your field staff?
13. The training programmes you outline for your field staff, do you think they are adequate to meet their training needs?
14. Are they able to apply the skills, knowledge and abilities to the job

after training?

15. Do these reflect in the output/productivity of your company?
16. Do you think training has any effect at all on your productivity?
17. What other factors, in your opinion, influence the level of your productivity, apart from training.