

**T.C
KASTAMONU UNIVERSITY
SOCIAL SCIENCE INSTITUTE
FACULTY OF ECONOMICS & ADMINISTRATIVE SCIENCE**

MASTER THESIS

**THE TECHNICAL AND VOCATIONAL TRAINING AND
REHABILITATION AND ITS IMPACT ON PRODUCTION COSTS**

AimanNASEREDDIN EDWEBI

Advisor	Assoc. Prof. Dr. Tolga ULUSOY
Juror	Prof. Dr. Muhsin HALİS
Juror	Assist. Prof. Dr. Mine HALİS

KASTAMONU - 2017

THESIS APPROVAL

The thesis “**The Technical and Vocational Training and Rehabilitation and it's impact On Production Costs**” submitted by **Aiman NASEREDDIN EDWEBI** in partial fulfillment of the requirements for the degree of MSc is apporved by the committee in Institute for Social Sciences, Department of Administrative Science.

Supervisor

Assoc. Prof. Dr. Tolga ULUSOY
Kastamonu University



Jury Member

Prof. Dr. Muhsin HALİS
Kocaeli University



Jury Member

Assist. Prof. Dr. Mine HALİS
Kocaeli University



06/11/2017

Institute Manager

Prof. Dr. Duran AYDINÖZÜ.....



UNDERTAKING

I declare that all information in the thesis were obtained and presented in the frame of ethical behavior and academic regulations, and all kinds of statements and reports which do not belong to me in this study -prepared in accordance with the rules of thesis writing- were fully referenced to the source of knowledge.

Aiman NASEREDDIN EDWEBI



ABSTRACT

Master Thesis

THE TECHNICAL AND VOCATIONAL TRAINING AND REHABILITATION AND IT'S IMPACT ON PRODUCTION COSTS

Aiman NASEREDDIN EDWEBI

Kastamonu University

Institute for Social Sciences

Administrative Science Department

Advisor: Assoc. Prof. Dr. Tolga ULUSOY

Training in its true meaning is the real factor on production and the basic purposes of training is creating a good generation and training them is a necessity for sovereignty of the industry and valuable production.

The researcher has given great interest in this study, and based upon defining the research problem by the researcher, many hypotheses and questions which have been answered. These hypotheses are summarized in following questions:

1. Is there any influence for training and rehabilitation on production costs?
2. Are there any positive effects which limit cost inflation?
3. Is there any role to incentives and motives in raising production efficiency of the workers?

The study adopted the descriptive methodology, and the two methodologies; analytical and comparative historical to analyze the quantitative quantities and pursuing its development through the use of some financial indicators used in evaluating economic performance of productive units in order to know the deficient sides in workers performance. This study was divided into five chapters as follows:

The introductory chapter addresses the general framework of the study, the first chapter was assigned to introduce performance perimeters. The second chapter addresses the concept of production costs whereas the third chapter deals with a brief profile of the Arab Cement Company. This chapter was assigned to introduce the Arab Cement Company and explaining the organizational structure of the company. The fourth chapter deals with role and importance of vocational training, and fifth chapter includes results and recommendations.

Keywords: Management, Technical Training, Vocational, Training

2017, 139pages

Science Code: 114706

ÖZET

Yüksek Lisans Tezi

TEKNİK VE MESLEKİ EĞİTİM REHABİLİTASYONU VE BUNUN ÇALIŞANLAR ÜZERİNDEKİ ETKİSİ: LİBYA ÇİMENTO SEKTÖRÜNDE BİR UYGULAMA

Aiman NASREDDIN EDWEBI

Kastamonu Üniversitesi

Sosyal Bilimler Enstitüsü

Danışman: Doç. Dr. Tolga ULUSOY

Gerçek anlamıyla eğitim üretimin gerçek unsurudur ve eğitimin temel amaçları iyi bir nesil yetiştirmek ve onları, endüstrinin özerklik ve değerli üretim gereklerine uygun olarak gereğince eğitmektir.

Bu nedenle araştırmaya konu olan sorunun araştırmacı tarafından yapılan tanımına dayanarak çok sayıda hipotez ve soru tez içerisinde yer almıştır. Bu hipotezler aşağıdaki sorularda özetlenmiştir:

1. Eğitim ve rehabilitasyonun üretim maliyetleri üzerinde herhangi bir etkisi var mı?
2. Maliyet artışını sınırlayacak olumlu etkiler var mı?
3. İşçilerin üretim verimliliklerini arttıran teşvikler ve güdüler üzerinde herhangi bir rolü var mı?

Nicel miktarları analiz etmek ve işçilerin performanslarındaki eksik tarafları anlamak amacıyla kullanılan bazı finansal göstergeler kullanmak yoluyla gelişimini izlemek için çalışmada tanımlayıcı yöntem ve iki diğer yöntem; analitik ve karşılaştırmalı tarihsel yöntemler kullanıldı. Bu çalışma aşağıdaki gibi beş bölüme ayrılmıştır:

Giriş bölümünde çalışmanın genel çerçevesi üzerinde durulmuştur. Birinci bölümde performans parametreleri tanıtılmıştır. İkinci bölümde üretim maliyetleri üzerinde durulurken üçüncü bölümde bir Arap çimento şirketinin kısa profili aktarılmıştır. Bu bölüm Arap çimento şirketinin tanıtımına ve şirketin kurumsal yapısının açıklanmasına ayrılmıştır. Dördüncü bölümde mesleki eğitimin rolü ve önemi üzerinde durulurken beşinci bölümde ise sonuçlara ve tavsiyelere yer verilmiştir.

Anahtar Sözcükler: İşletme, Teknik Eğitim, Mesleki Eğitim

2017, 139 sayfa

Bilim Kodu: 114706

DEDICATION

To my parents who attend on my comfortand made me standing up in this place
today

Tomy wife that stand with me and endure with me the harden of this research

To my supervisor who support me and helped me a lot

And to everyone that give me a hand I dedicate to them this humble effort

Researcher:

Aiman NASEREDDIN EDWEBI

ACKNOWLEDGMENTS

I extend my sincere thanks and appreciation to my supervisor for his large efforts in completing this research.

And to the administrations of souk alkhamis compound for cement and almerqeb, zletin and lebda compounds for their help in completing the field study in their factories and to all supervisors and workers in it for all what they do for this study.

Distinguished Jury Members Prof. Dr. Muhsin HALİS, Asst. Assoc. Dr. Prof. Mine HALİS and to the President of our department Prof. Dr. Yavuz DEMİREL,

And who helped me to print this study, to all of them and to everyone that give me a hand even with a good word I express to them my gratitude and appreciation.

TABLE OF CONTENTS

	Page
THESIS APPROVAL	ii
UNDERTAKING	iii
ABSTRACT	iv
ÖZET.....	v
DEDICATION.....	vi
ACKNOWLEDGMENTS	vii
TABLE OF CONTENTS.....	viii
LIST TABLE	xi
LIST FIGURE	xiii
CHAPTER ONE	1
1. INTRODUCTION.....	1
1.1. Research Problem	2
1.2. Study Methodology	3
1.3. Hypotheses and Questions.....	3
1.4. Place and Time Scope ofthe Study	4
1.5. Importance of the Study	5
1.6. Objectives of the Study	6
1.7. Steps of Study Design	6
1.8. Geographic Scope and Society and Sample of the Study.....	7
1.9. Building Procedures for Data Collecting Tool	9
1.10. Definitions ofthe Procedural Study	11
CHAPTER TWO	13
2. PERFORMANCE CONCEPT AND PERIMETERS	13
2.1. Performance Determinants	13
2.1.1. First: Behavioral Performance Determinants	13
2.1.2. Secondly: Performance Determinants Resulting From The Physical Work Environment	17
2.1.3. Thirdly: Organizational Determinants for Personnel Performance 21	
2.2. Performance Appraisal	27
2.2.1. First: Concept of Performance Appraisal	27
2.2.2. Secondly: Obstacle Facing Performance Appraisal	28

2.2.3. Thirdly: Methods of Performance Appraisal:	31
CHAPTER THREE	39
3. MEASUREMENT STANDARDS FOR PERFORMANCE EFFICIENCY IN PRODUCTION ESTABLISHMENTS	39
3.1. First: Production Energy Standard	39
3.2. Secondly: Productivity Standard	42
3.3 Thirdly: Added Value Standard.....	44
3.4. Fourth: Profit Standard	45
3.5. Fifth: Invested Capital Revenue Standard	46
3.6. Part One: Concept of Production Costs	46
3.7. Part Two: Control of Labor Cost	47
3.7.1. Wage Systems, Requirements and Objectives.....	50
3.7.2. Learning Theory and It Impact On Incentive Wages	51
3.8. Part Three: Learning Curve and Estimating Labor Cost	52
CHAPTER FOUR.....	55
4. A PROFILE OF ARAB CEMENT COMPANY.....	55
4.1. Part One: Establishment of Arab Cement Company and Organizational Structure	55
4.1.1. Organizational Structure of Arab Cement Company.....	58
4.2. Part Two: Development of Workers in the Company	62
4.3. Part Three: Economic Importance of Cement Manufacturing in The Company.....	64
4.4. Part Four: Evaluating Economic Performance of The Arab Cement Company.....	68
4.5. Conclusion.....	72
4.6. Evaluating Company Performance Using Production Criteria.....	72
4.7. Evaluating Efficiency of Arab Cement Company Performance Using Rate of Invested Capital Return	78
CHAPTER FIVE.....	80
5. IMPORTANCE AND ROLE OF VOCATIONAL TRAINING IN LABOR DEVELOPMENT	80
5.1. Part One: Training Concept and Importance	80
5.1.1. Planning For Training.....	81
5.1.2. Designing and Planning Training Program	84
5.2. Part Two: Monitoring and Evaluating Training Programs	85
5.2.1. Monitoring Training Programs	86

5.2.2. Evaluating Training Programs	86
5.3. Part Three Vocational Development Centers in Libya.....	94
5.4. Part Four: Financing Vocational Development Centers.....	103
5.5. Part Five: Objectives and Functions of Vocational Development Center	105
6. CHAPTER SIX	109
INFORMATION AND RESULTS ANALYSIS.....	109
6.1. First Chapter Conclusion	110
6.2. Conclusion of Results of Second Chapter:	117
6.3. Conclusion of Chapter Three.....	123
6.3.1. Conclusions.....	126
6.3.2. Recommendations.....	127
BIBLIOGRAPHY	131
ANNEX	134
The Questionnaire	134
CURRICULUM VITAE.....	139

LIST TABLE

	Page
Table 2.1. Maslow hierarchy of needs	15
Table 4.1. Development of national and foreign labor and total workers at the Arab Cement Company in the period (1988-2001).....	64
Table 4.2. Economic importance of ArabCement Co. On national economic level in the period (1988-2001)	66
Table 4.3. Economic importance of ArabCement Co. On cement manufacturing level in the period (1988-2001)	68
Table 4.4. Production capacities for products of ArabCement Co. (cemen, lime, gypsum) in (1988-1997)	70
Table 4.5. Productivity of work element in (1988-1997)	74
Table 4.6. Productivity of work element in (1988-1997)	75
Table 4.7. Net and total added value for ArabCement Company in (1988-1997)	76
Table 4.8. Depreciation at ArabCement Co. In (1988-1997)	77
Table 4.9. Social surplus rate (*) at ArabCement Co. In (1988-1997).....	78
Table 4.10. Investment revenue rate (*) at ArabCement Co. In (1988-1997)....	79
Table 6.1. Showing academic level (total number 150)	111
Table 6.2. Showing centers services expansion (total number 150).....	113
Table 6.3. Showing advantage from expanding centers services (total number 150)	113
Table 6.4. Showing cost of using centers services (total number 150).....	113
Table 6.5. Showing importance of form of the services of the centers	115
Table 6.6. Showing to what extent the information gained from the vocational centers are applied (total number 159)	115
Table 6.7. Showing awareness about evaluating activities of the centers (total number 158).....	116
Table 6.8. Showing the problem of multiple activity times in the centers	119
Table 6.9. Showing the problem of length of activity period in the centers.....	119
Table 6.10. Showing the factors preventing participation in the centers activities	120
Table 6.11. Showing the relationship of the centers with higher education institutions.....	121
Table 6.12. Showing the future relationship of the centers with higher education institutions.....	121

Table 6.13. Showing type of services provided by higher education	123
Table 6.14. Showing the method and type of participation bonuses in the centers activities	123

LIST FIGURE

	Page
Figure 2.1. Learning curve by 80 %.....	54

CHAPTER ONE

1. INTRODUCTION

The continuation process of learning and training for the purpose of vocational development must be given high importance because vocational training gives opportunities to job holders after getting job certificate, the opportunity to develop and improve their skills related to principles and nature of their jobs and to get prepared for their vocational tasks and roles in the new jobs.

The knowledge acquired by the student in the educational institution during his preparation in the formal education will become old if not accommodated with training and rehabilitation in the field of work. In fact, he must continue his academic and empirical road in the midst of work crowd.

The vocational or professional shall learn all through his life. The continuation of vocational training and rehabilitation is such an essential matter for workers in order for them to be able to accommodate and adjust to era complexes and technological changes.

Learning through vocational training in the seventies of the twentieth century received great attention in the U.S.A and was a priority for American disciplinarians. Educators and disciplinarians called for effective programs with scientific benefits to improve personal growth and vocational skills and learning efficiency.

And as the issue of control and monitoring in vocational training programs planning, drawing and coordination has become the major concern for disciplinarians and educators and officer in the industry all together as many of these programs and activities have become unsuitable and improper for workers needs.

Because learning through training has usually produced bright programs and activities designed by administrators or university professors requires the attendance of workers and on account of their free time without taking consideration of

readiness, interests and social commitment...etc. which has lead to unfeasibility of such training programs and activities. These interests has lead to searching suitable alternatives in the form of vocational development centers.

Vocational development centers as they are called in U.S.A or as called the teachers centers in U.K. which some disciplinarians consider them the strongest methods and tools on the theatre today to provide on the job training and rehabilitation.

Vocational development centers or open classes which help workers solve the problems they face during work are place in vocational training programs are developed and workers are improved are involved to reach solutions for their work problems and exchange new ideas in these centers. Workers here become students and the opportunity is given to them to select new methods and techniques to learn in new and different learning environment and also have the chance to criticize and evaluate their current methods and techniques in education.

1.1. Research Problem

It is a rule of thumb that perfection comes with practice. But this is rarely true, because perfection is rarely achieved. Hence, it is better to say that practice increases efficiency because as the worker starts producing a product or a new stage, he starts learning and his efficiency is gradually improved in non-linear form.

And by learning curve, learning effects can be described on outputs for every hour or every machine hour. As we find that this curve helps the management in projecting amount of costs change with time. This projection or expectation of costs behavior is an essential requirement for many administrative decisions. As experience increases and operation progresses, the costs become lower. Hence, the learning curve is a cost function reflecting decrease of average cost regularly with increase of production.

However, what is observed in real life is the total opposite, despite the technological advancement and training programs provided by vocational centers to workers, we find that cost level is still high. This may be attributed to some reasonable justifications such maintenance costs, work injuries which gives logical and deep

interpretation. Some of the other reasons are still under study and research and that is why the researcher has given them attention in this study.

It is noteworthy to say that production costs concerned with this study are the direct work cost and the relevant additional costs.

As for the costs of material, accessories and marketing costs and all fixed costs, they may be influenced by learning but will not be discussed in this study.

1.2. Study Methodology

This study is based on three integrated research techniques; the first is by review of most important studies which have addressed vocational training concept through:

- a. Sources available in libraries (i.e. books and periodicals).
- b. Information taken directly from experienced and specialized individuals at vocational development centers.
- c. Books and personal material possessed by the researcher or borrowed from others particularly reports and journal published by industry sector in Libya.
- d. The researcher shall hand out a questionnaire to the study sample which will be selected from Arab cementco. factories. In addition, the researcher shall make interviews with managers of vocational development centers subject of the study.
- e. The researcher shall analyze results of information of the questionnaire.

Regarding the second technique, it is a field study on ArabCement Co. factories intended to interpret relationship between training and production costs.

1.3. Hypotheses and Questions

Based upon identifying the problem of the study in above figure, the following hypotheses and questions have been raised:

1. Does training and rehabilitation influence production costs?
2. Will technical, academic and cultural growth of the workers lead to improvement of the production process?
3. Does training have any positive effects which limit cost increase?
4. What is the role played by vocational development centers in reducing frequent work injuries?
5. What are the best times for training activities in vocational development centers?
6. Have vocational development centers contributed to raising workers efficiency from the technical and administrative aspect?
7. Do incentives and bonuses have any role in raising productivity efficiency of workers?
8. Are training and development programs considered an effective tool in reducing injuries and accidents?
9. Is increase of damaged and lost material an indicator of decline of workers efficiency?

1.4. Place and Time Scope of the Study

This study shall deal with learning concept for participants of vocational development centers existing in Libya which include:

1. The specific training center on cement industry in Benghazi
2. National management center in Tripoli
3. Industrial research center in Tajura

And to avoid any vagueness in understanding the study and its scope, the researcher defines the scope of study in certain aspects. Therefore, this study shall only deal and adhere within the following limits:

1. The scope of study is limited to vocational development studies in Libya and which are related to cement industry.
2. The society of the study is comprised of cement factories in Libya which are affiliates of ArabCement Company because they have common

characteristics which go with the nature of the research and its objectives according to unified principles and standards about learning and training concept.

And for analysis purposes, the researcher shall apply the study on four factories:

1. Suq Khamis Cement Complex
2. Zliten cement factory
3. Lubda cement factory
4. Mergeb cement factory

1.5. Importance of the Study

On job training was defined as the ability to acquire new experiences and adjust old experiences and benefit from new experiences in the future. And that helps production units continue their growth and developing their skills through saving highest efforts of organizing training programs.

This study was designed to fulfill a number basic needs which the worker needs wherever he is. Hence, the importance of the study lies in the following:

1. The need to supply and provide highest amount of information and knowledge about the phenomenon of vocational development centers and their importance for on the job training of workers.
2. Create general awareness and develop more understanding about importance of training through learning.
3. The need to improve workers and train them on the job.
4. Upgrade workers efficiency from technical and administrative aspects.
5. Following up on new technologies in different industries and upgrading workers skills.
6. To do without foreign missions of trainers by encouraging vocational development centers to provide local training which would save effort, time and costs.

1.6. Objectives of the Study

The study was basically designed with the aim to:

1. Identifying the extent to which training influences production costs.
2. Identify to what extent vocational development centers can be exploited in training and rehabilitating individuals to perform works which are in harmony with their field of specialties.

As the researcher believes that training has positive influences which limit the cost increase based on the observation of training programs for workers provided by those centers.

The researcher also sees that these vocational centers are such a highly important initiative because they reduce frequent work injuries and in turn reduce increasing costs incurred from misuse of modern machines and equipment.

1.7. Steps of Study Design

The main goal of this study was to get an idea about vocational development centers for workers in Libya related to the cement industry and in particular what they provide in terms of re-training of workers and rehabilitation on the job with regard to:

- a. Deciding the best times for centers activities
- b. Identifying relationship of the centers with higher education institutions.
- c. How to identify programs and activities.

And the study examined how much these centers can be utilized to fulfill the training needs to rehabilitate workers in Libya

And to answer the abovementioned points, the following steps have been taken:

1. The researcher surveyed literature through review of what has been written about technical and rehabilitation and vocational development centers through:
 - a. Sources available in libraries
 - b. Information taken directly from experts and specialists in vocational development centers
 - c. Books and personal material the researcher either owned or borrowed.
2. A questionnaire was sent to factories which were involved in vocational development centers programs and activities subject of the study. The researcher had prepared this questionnaire. The researcher also made interviews with managers of vocational development centers subject of the research as well as individuals associated with those centers.
3. The researcher analyzed results of the questionnaire information in the computer center, and based upon the results of surveying literature and analysis of questionnaire information, the researcher came out with several conclusions and recommendations related to development centers

and by improvement and development of on the job technical training for workers, and also with some recommendations which may help improve on the job training programs and activities in Libya.

1.8. Geographic Scope and Society and Sample of the Study

Improving vocational development services for workers in production field in general and workers in production factories and companies in particular. The first case which concerns officer in industry sector is related to knowledge and skills and concentration on advantages of human growth and development altogether, shall contribute to improving worker status and raise it to expectations. And in order for production units to have new knowledge and skills, they must be given the opportunity to continue development of their experiences.

And as a result of concentrating on development of workers skills, the Fatah revolution supported new multi-facet activities and programs particularly as the

industry sector in Libya sought to find vocational development centers to finance them and support them financially by the state. Such centers shall work in certain geographic regions and provide several services in fulfilling the needs of the society which it serves. And since the task of developing the worker and train him and continuously rehabilitate from the vocational side has become an important issue in the country in general, the state of Libyan has contributed to finding such vocational institutions.

1. Industrial Research Center*

The industrial research center is one of the greatest achievement of the Fatah revolution as it was established by law (25) in 1970. This achievement came out of concern of the fateh revolution and its belief in the role of scientific research in founding the right base for social and economic infrastructure of this society through the ambitions of performance of the tasks and responsibilities assigned to this institute.

2. National Management Institute

The general management institute was established in 1953, in the city of Tripoli, and belonged initially to the civil service in the federal government and with the objective of training employees on accounting and bookkeeping and simple administrative works. And in 1964, the government then called the united nations

mission to study the status of the Libyan administrative system. This mission recommended the establishment of a comprehensive public administration institute to train all employees of different classes and the Libyan government accepted this recommendation.

And in 1968, the project works started and the old management institute with the new one under the name of national institute for general administration, a law of its establishment. Was issued in 1968 with a corporal body capacity and an independent budget. The national management institute is an academic, educational consulting organization concerned with improvement and development of labor force to achieve

highest performance level. It is the scientific technical system specialized in this field and particularly training, consulting, researches and documentation all of which shall support and enhance administrative development and achieve objectives intended behind it.

Sample of the study is made of about (3000) workers, administrators, technicians, workers in the production process. It is the society to which three abovementioned vocational centers provide educational services particularly that related to rehabilitation and training. And due to participation by large number of workers in vocational centers programs and activities, it was necessary to decide number of the sample individuals entitled to participate in responding to the study questionnaire. Therefore, the researcher selected a relative sample of (150) worker of different specialties who had previously been involved in vocational development centers programs and activities. The questionnaire was sent to about (200) worker.

1.9. Building Procedures for Data Collecting Tool

For all of these subjective givings, and since there was no ready tool to be used for the purpose of the study and collecting the required data, the research has developed a questionnaire intended to get the necessary data for his study.

As this questionnaire went through four basic stages including:

Initial construction, credibility, field visits-final form and method of distribution and follow up. Concerning the first stage in terms of making the questionnaire which is related to initial construction. The idea was discussed with many professors and their views had big influence on the researcher in preparing the initial form of the questionnaire to cover four fields of the main research fields.

It was necessary to insure validity of the questionnaire and its subject and measuring it for the purposes it was made for which circulates around credibility and consistency where the researcher contacted a group of specialists and requested them to review the questionnaire and particularly the part related to clarity, credibility and

objectivity. Their feedback played an important role towards constructing the questionnaire in its final form.

Concerning the third stage in building the questionnaire which is making field visits. The researcher contacted by phone managers of the three vocational centers subject of the study with the aim to explain objective and goals of this study and asked for their cooperation accordingly and to get an updated list of names of participants in centers programs and activities and to also assist centers managers in insuring the participation of the workers in answering the study questionnaire and finally to get reports, booklets, publications and other printouts which may be used in developing the overall view of the dynamics of vocational development centers. In addition, the researcher visited all three centers subject of the study where he met with officer from the centers to collect information through personal interviews on following points:

- How to assign the right times for on the job vocational training and programs.
- The relationship of the vocational development center with higher education institutions
- Academic degrees and certificates
- Plans for expanding and spreading current programs
- Defining responsibilities of planning centers programs and activities
- Availability of educational equipment and material and first aids.
- Future plans for administrative development and improvement. And regarding setting the questionnaire in its final form and how to distribute it as a final stage of the questionnaire, the researcher revised some of the paragraphs and questions. Also, other parts were deleted and some new paragraphs and questions were added based on the assistance and views of some colleagues and teachers in addition to recommendations from centers officers.

The final form was finished, and questionnaire was in its final form as it was sent to all individuals of the sample.

1.10. Definitions of the Procedural Study

To avoid any vagueness or confusion in understanding and interpreting some of the definitions stated in this study. We saw that it was important to define some of them which are frequently used here and to define in a procedural method to facilitate and clarify them in such a way as intended by this study particularly. The most important terminologies used frequently in this study include:

1. Vocational development:

It is an extended and continuous cognitive network complementing vocational preparation and provides alternatives to achieve vocational growth and personal vocational development.

2. Vocational development centers:

They are the places where vocational training programs are developed and improvement of workers in field of production through exchange of successful expertise and use learning sources and training on dealing with most urgent problems in the scope of work.

3. On the job training:

It is any kind of activity by which new ideas, development, understanding and rehabilitation are provided to the participant along with on the job improvement, as it is that development which takes place on the job as a continuation of the vocational development which started before the service during the first preparation stage.

4. Workers:

They are all individuals with different administrative and technical specialties, Libyan or from other nationalities, male and female, who work in one of the production factories belonging to the state public sector.

5. Supervisors:

They are the staff of any of the production factories belonging to the state public sector and who occupy supervising jobs (department manager, division chief, unit chief, shift chief...etc.)

6. Production process:

It refers to the role performed by worker of job he undertakes inside the factory for production of the product unless it is the final role of production. As we know, for producing the product, a group of processes are required such as preparation, transportation, blending, burning, loading. Every stage is related to the other one as all stages complement each other and every worker complements the remaining workers in the same stage.

7. Initial questionnaire form:

It is a questionnaire form distributed to some of the individuals of the samples prior to final distribution of the questionnaire to test easiness and clarity of its question.

CHAPTER TWO

2. PERFORMANCE CONCEPT AND PERIMETERS

2.1. Performance Determinants

By performance determinants it is meant those factors affecting the performance of individuals and their productivity in the work. The field of research in performance determinants is wide and extensive as in fact there are scientists specialized in the field of productivity who sees that there is not anything in this world that does not affect productivity. Productivity is the outcome of performance process calculated for certain period and defined quantitatively¹. This subject is one of the most important subjects which has been the concern of many researchers in their strive to interpret the phenomenon of performance fluctuation up and down, and to identify the facts behind it² and due to the variability of terminology of this subject, they were classified.

Under certain classifications. In this study, the researcher shall depend on the classification which divided the determinants into three main categories; behavioral determinants of performance determinants resulting from physical work environment, and the organizational determinants which we shall address briefly as follows:

2.1.1. First: Behavioral Performance Determinants

Human behavior is the determinant of functional performance of the individual and is the outcome of interaction between the individual, development and situation he undergoes³.

¹ Elmansuri Mohamed: Performance Appraisal, Lecture Given At (Personnel Management Course) (2) At The Specific Training Center on Cement Manufacturing And Construction Material Manufacturing in Benghazi From 6.8.94 to 18.8.94 Printed in Unpublished Memo, p (15).

² Suliman Hanafi Mahmoud, organizational behavior and performance), ibid, p. 38

³Hilal, Mohamed Abdulgani, ibid, p 20.

This type of determinant includes everything related with the personnel behavioral aspect which affects their functions such as level of motivation towards work, conception, personality, learning, training, needs...etc⁴. As detailed next:

1. Motives: they are the reasons behind any behavior which affect the behavior of the individual with what he believes he needs in hope of fulfilling largest number of needs or to avoid lack of fulfillment of other needs. Once the management is able to define such motives, it can act accordingly for such fulfillment and taking the necessary decisions to be able to motivate the individual towards best performance⁵.

2. Conception: it is an essential determinant for individual behavior upon which the individual takes decisions and makes actions and policies, and he shows different emotions and reactions. Self-concept may be improved by knowledge, data and information. The conceptual process is not affect by the person himself but is subjected to other factors such the surrounding environment, personal and organizational relations, values and morals...etc⁶.

3. Personality: it is characterized by self-cohesion and coordination striving for self-actualization. It is also by itself determined by certain determinants like learning, energy, vigor, sex, age, values, beliefs, culture and roles played by the individual past and present⁷. All of these affect the e person's needs and expectations⁸. Based upon the study of personality, the management can put the person in the right position or job for him suitable with his abilities and skills.

4. Learning: also, the abilities of individuals to learn and develop skills are different as learning process is automatic and permanent, and they acquire experience during life as a result of practice and repetition and trial, and the accumulation of experiences is reflected in their behavior⁹. As the years of experience increase, the

⁴Elmansur, Mahmoud Mohamed, p.15.

⁵Elshenwani, Salah, personnel management and public relations, goal introduction, Alexandria, Shabab Eljamaa organization, 1997, pp. 515-516.

⁶Elnajar, Farid Rageb, theories and forms of behavioral sciences for administrative development and performance improvement, printing agency, 1978,p.85.

⁷Elmansuri, Mahmoud Mohamed, ibid,p.16.

⁸Elnajar, Farid, ibid, p. 104.

⁹ibid, s.104.

performance level increases and gets better with consistency of the other factors like intelligence, will to learn and health capability...etc.

5.Training: it aims to change behavior systematically and by plan. The management can, through providing information and clarifying goals to raise skill level, thinking and changing individual approach, increase level of performance.

6. Human needs: the classical economic view about the individual assumed that he was wise and disciplined in his actions. He has certain economic needs and goals. Hence he can achieve the maximum fulfillment and in easiest way possible. Thus, the management can build on that to motivate him by attractive physical wages. However, it was also found that there are other non-physical needs which he looks to stimulate and achieve¹⁰, as human needs are numerous and variable. As the person fulfills one need, another comes out in the priorities ladder. There are many psychologists who divided such needs. One of the most important division is the Abraham Maslow hierarchy of needs as shown in Table2.1 down below¹¹:

Table 2.1. Maslow hierarchy of needs

5- self-actualization	Achieving goals and success
4-self-esteem needs	Appreciation and respect, feeling of being important
3- social needs	Love,belonging,affection,centeredness,presence
2- security needs	Security, safety, stability, assuredness
1- Basic needs (physiological)	Food,drink,home,sleep/clothes

And establishing cooperation societies or markets, and providing transportation, establishing cultural, social and sports clubs for personnel and their families, and establishing service fund and providing health care for personnel and their families and participating in social security or insurance...etc. such services may be provided free or with minimum cost¹². The more level of services increases and expands its range, the higher the spirits of the personnel becomes and they have stronger will to

¹⁰ibid, p.104.

¹¹Said, Salah Auda, personnel management, Tripoli, open university publishings, 1994, p.297.

¹²ibid, p. 292-293.

work and extend bigger efforts in terms of quantity and quality which shall lead to developing and improving productivity levels¹³.

And due to the effect of such needs on behavior of the individual and their activity, they form a type of tension which pushes the individual to act in certain behavior to reduce this tension and fulfill these needs in order to act with wisdom and take the right decisions and direct the efforts of individuals in the right direction in harmony with the goals of the organization and to create feeling of self-appreciation and satisfaction and self-actualization to contribute in improving performance greatly¹⁴.

7. Social Welfare: Organizations have started to pay attention to means of comfort of individuals and their families and developing their cultural capabilities even past working hours and to take care of them in all social and health aspects to provide the right work environment so that personnel are totally focused on production without being distracted by social problems or fear of their future or families future whether at time of disablement or death¹⁵. Social welfare services must fulfill needs and requirements of largest number of persons in the organization and if the management does not provide them, negative results may prevail. Welfare policies shall be based on the following principles:

1. Management shall not interfere in personnel privacy.
2. It must be provided when the personnel want it
3. It must be beneficial to management and personnel in the long range.
4. It shall benefit largest number of employees.
5. It shall not be provided as a grant or charity to the employees.

Some examples of social welfare services are giving food meals to employees, providing them homes or giving them housing loans and money loans for social occasions.

¹³ibid, p. 522-523.

¹⁴ibid, p. 292-293.

¹⁵ibid, p. 522-523.

And establishing cooperative societies or markets, and providing transportation and establishing cultural, social and sports clubs for employees and their families, and establishing services and providing health care for employees and their families and subscribing in social security or the insurance...etc. Such services may be provided free or with low prices¹⁶. And as the level of services increase and become more inclusive, the spirits of the employees shall increase and they are pushed more towards doing their jobs and extending more efforts in terms of quantity and quality which shall lead to developing and improving productivity level¹⁷.

2.1.2. Secondly: Performance Determinants Resulting From The Physical Work Environment

These determinants include the work place and its auxiliaries such as the lighting and air conditioning and cooling and heating and also the machinery and equipment used in addition to all outcomes of the work environment effects like noise, temperature and smells¹⁸ and dust...etc. Paying attention to these matters helps improve efficiency and increase productivity and reduce its cost and raise the moral spirit between individuals and reduce work injuries¹⁹. Organizations have been concerned with studying these determinants and their effects as such concerns were reflected in design and arrangement of buildings, machinery and equipment at work places aiming to increase performance level²⁰. There have been many experiments done such as (Hawthorne) factories experience in the U.S.A which proved that psychological motives were more important and impactful on the worker's production. However, we cannot ignore the overall impact of these factors²¹. Natural work environment has a clear effect on production both in terms of quantity and quality and also has a psychological effect on the employees themselves and their approaches and attitudes

¹⁶ *ibid*, p. 490-492.

¹⁷ Said Salah Auda, *ibid*, p. 536.

¹⁸ Elmansur, Mahmoud Mohamed, *ibid*, p.16.

¹⁹ Elshenwani, Salah, previously mentioned reference, p. 207-208.

²⁰ Elmansuri, Mahmoud Mohamed, *ibid*, p. 16.

²¹ Elisawi, Abdurrahman Mohamed (Psychology and Production) University Hall For Publishing and Distribution and Circulation, p 131.

towards work²². We shall address some of these determinants in the study briefly as follows:

Lighting: good lighting contributes to comfort of the workers as they will extend less effort during work and improve level of production with the variation of degree of lighting and its intensity depending on the type of jobs. Naturally, maintenances works and writing require more light than for example loading and unloading works in agriculture. Light must be suitable for the type of work and fixed and equally distributed and must be concentrated on the work place and not the eye of the worker because that would lead to eye stress and may weaken the vision. Lighting may be improved by placing bright objects and other material away which reflect light away from sight of the worker's vision²³.

Some of the most important things in providing suitable lighting are colors. Colors improve lighting and provide sources of lighting. It is well known that dark colors absorb light whereas light colors reflect it. They also affect the psychological state of the employee. There certain colors which stimulate the nerves and others cause comfort. For example, orange and yellow colors cause comfort and relaxation, blue color causes serenity and wrong colors lead to eye stress which leads to feeling tired and stressful. And when employees deal with black color matters, things around must not be bright or colorful and more light is required²⁴. Many studies have proven that setting a good lighting system leads to accuracy of production. It is also safe to say that generally improving lighting is one of the factors leading to increase of production and raising the moral spirit of individuals. In addition, good lighting in factories makes maintenance easy and decreases number of work injuries²⁵.

1. Noise: It is a relative matter which depends on extent of sound increase to the ear. High sounds may not disturb employees if they are familiar with them whereas unfamiliar or sudden sounds affect them²⁶.

²²Hashem, Zaki Mahmoud, *ibid*, p. 485-486.

²³Elisawi, Adburahman Mohamed, *ibid*, p.133-132.

²⁴ *ibid*, p.134-135.

²⁵Elshenwani, Salah, *ibid*, p.211.

²⁶ *ibid*, p.211.

Noise affect depends on type of work performed by the person as it does not largely affect simple dynamic works, but it affects to a large degree quality of complex works because such works require great concentration²⁷.

In general, noise causes bad affects on the individual's health as it causes stress and may damage his hearing and could lead gradually to loss of his hearing sense and that leads to reducing production of the individual in the factory and hence increasing job rotation. It may also lead to more errors and work injuries²⁸.

In order to deal with these negative aspects of noise, special buildings may be designed for that and putting material which absorbs noise or reduces it to least extent possible. also, other noise absorbing material may be used to cover roofs or treat the source of noise itself by reconsidering designs of the machines causing noise or putting them on pillows which absorb frequencies or placing them in isolated places²⁹. In cases where previous solutions are not available, ear plugs are used to reduce the damages but this requires awareness on the part of the individual of its importance and direct benefits in addition to monitoring and interest of the employer to provide them and urge all employees to use them.

2. Climate: this may be addressed through two important climactic factors which have direct affect on mankind; heat and humidity:

- a. Temperature: temperatures vary with different seasons in summer or winter and from one place to another. temperatures are high in the tropical regions and low in the polar areas. water surfaces also (seas and oceans) have a big role in moderate temperatures. temperatures are lower as we go up on sea level by one centigrade every one hundred meters³⁰. Moderate temperatures are comfortable. On the other hand, very high and very low temperatures lead to discomfort and complain among the employees³¹. Any place that is characterized with high temperatures cause fatigue,

²⁷Elisawi, Adburahman Mohamed, previously mentioned, p.136-137.

²⁸Elshenwani, Salah, ibid, p. 211.

²⁹ Ibid, p. 212, look also: hashem, Zaki Mahmoud, ibid, p. 489.

³⁰Shhada, Naaman, (Climate Geography, Meteorology, Amman, Mustaqbel publishing and distribution hall, v 1996, 4 m, p. 95, 103, 101.

³¹Elisawi, Adburahman Mohamed, ibid, p.138-139.

tiresome and heavy breathing and high perspiration and that of course affects production. Naturally, production becomes higher with improved temperatures. Hence, it is essential to cool temperatures at the work place in the summer and to warm it in the winter by best means and least cost to provide the proper environment to perform work³².

Differential humidity, used to express vapor in the atmosphere,

- b. Humidity: Specific humidity is related to temperature, it decreases if temperatures are low and increases with increased temperatures. for example, if the temperature is (5)c, then the specific air humidity is (6.8 gm/kgm). And if the temperature is (35)c then the specific humidity reaches (63,39 gm/kgm). thus, the highest concentration of humidity in tropical regions where temperatures are high and decreases as we head toward the two poles³³. Humidity makes employee feel relatively annoyed and breathing heavily³⁴ and that in turn leads to reducing employee's ability to perform.

3. Dust: It is considered one of the most important industrial pollutants affecting environment in general and the employees in particular. If its concentration exceeds certain ratios as it penetrates with the air into the employee's respiratory system causing respiratory and lung disorders with severity depending on type of the dust. The smaller the molecules of the dust the easier it gets into the deep respiratory systems³⁵. Dust also affects mechanical and electrical machines and even more the micro-electronic systems where accumulation of dust shortens its production lifetime and also affects quality of maintenance which becomes difficult with existence of dust especially in micro-systems.

³² Ibid, p.139.

³³ Shhada Naaman, ibid, p. 159.

³⁴ Elisawi, Abdurahman Mohamed, ibid, p.139.

³⁵ Alaam, Ahmed Khaled Ashur Ahmed (Pollution and Improving The Environment): Nahda Misr For Printing and Publishing and Distribution, v 1, 1993, p.143.

Moreover, dust affects directly pollution of products such food and medical items³⁶. Consequently, if there is dust at work place, performance is affected directly and is reduced for not providing proper and health environment for employees. Dust can be overcome by limiting its sources or by using different filtering tools to clean the polluted air such as infiltration material made either of paper or fiber or metal. In order to contain affect of dust, it is recommended to have a proper ventilation in the work place and perform.

Regular medical examination for employees and reduce working hours and prevent those who have respiratory or hearth problems from working in such places³⁷...etc.

Developing countries generally suffer from having big pollution problems. Nevertheless, they don't pay much attention to them despite their awareness of the problem and its threats. It has laws which preserve the environment and punish the violators and which calls for stopping sources of pollution. However, the reality is the opposite. The problem is even more complicated due to lack of awareness by the individual who is directly harmed by it in addition to lack of interest of officials about risks of pollution on the environment and human health in general. There are also other several factors having big role on affecting performance like smells, ventilation of workplace and its arrangement and size and closeness to the residence place and quality of number of working tools and low risks...etc.

2.1.3. Thirdly: Organizational Determinants for Personnel Performance

Organization did not have much importance in the old ages. However, it has become an essential and important part in work which is usually expressed as management or organization. The organizational environment of the work affect largely the personnel performance and success of projects in general. Clarity of goals, policies and procedures and extent of clarity of tasks and responsibilities or relationship between the authority, responsibility and career opportunities³⁸ and other rights such as bonuses, training or overtime and punishment systems in case of default of tasks,

³⁶Elshnwani, Salah, *ibid*, p.213.

³⁷Alaam, Ahmed Khaled, *ibid*, p.145.

³⁸Elmansuri, Mahmoud Mohamed, *ibid*, p.17.

and announcing all of these systems to all personnel is a great promoter for good performance and reaching goals of the organization in easiest ways. We shall address briefly some of these determinants in the following examples:

1. Organizational Structure of the Organization

Organizational structure in the organization is similar in its role to skeletal structure of human as it connects all parts of the body. In order for an organization to be successful, this structure must be balanced and adjusted according to goals and basic processes of the organization³⁹.

the researcher has noticed that there are organizational structures in Libya but the problem lies in the accurate execution. Not all departments are given same care as some of these departments are ignored or marginalized like research, development, projects, planning and training departments and may not even exist at all in spite of the great and strategic importance of such departments particularly in the long range. On the other hand, there is the problem of instability of the set organizational structures.

This is not a call to freeze them but rather a call to reform them scientifically and systematically based on scientific studies and as required by nature of work of the organization to develop its goals and according to its technique of providing services and not according to favoritism towards one person over another or for mere anger of one person over another all of such would be reflected on the personnel performance.

2. Job Description

One of the most impactful factors on personnel performance is clarity of tasks and responsibilities given to personnel and writing them clearly and handing them in person so that each one of them knows exactly what is required from him and is aware of limits of his tasks and responsibilities. Such tasks will always be in front of him as a reference in performing his work. These tasks and responsibilities are

³⁹Elshnwani, Salah, ibid, p.211.

distributed according to job specialty specified in the organizational structure of the organization⁴⁰.

Job description has an important role in assigning the right person in the right position to be able to perform his tasks with skill and efficiency. The researcher has observed that job description has not been given due attention by organizations in Libya and if so, it is given to some supervising jobs only where other jobs have no defined and written tasks and responsibilities and the performance of jobs of the organization can only be achieved by complementing one job with the other.

3. Leadership

A good leader is the one who has certain skills including technical skills related to type of work where he shall have experience in the field of work assigned to him, and other special skills related to human relations in terms of dealing with and communicating with his subordinates and getting involved with their problems...etc. Other administrative skills which are related to performing the tasks of planning, organizing, directing and monitoring and the ability to achieve coordination and integration and executing whatever recommendations given to him which all depends on his relationship with his superiors. If the leader has good relationship with his superiors, it enables him to work and gives a push to his subordinates to respond and vice versa⁴¹. The successful management leader is the one who can act successfully in face of existing situation and according to conditions and requirements surrounding the situation⁴². Social conditions also enables him to use such skills or thwart or obliterate them⁴³. Many empirical experiments have confirmed importance of sound supervision and following leadership principals in increasing of production⁴⁴ as the skillful leader leads to raising the spirit of the subordinates and extending all of their efforts to improve performance.

⁴⁰Elshnwani, Salah, *ibid*, p.222.

⁴¹Elshnwani, Salah, *ibid*, p.224-225.

⁴²Hashem, Zaki Mahmoud, *ibid*, p.492.

⁴³Elisawi, Abdurahman Mohamed, *ibid*, p.153.

⁴⁴Omar, Abdurahman Abdulbaqi (Personnel Management And Human Relations) Ain Shams Library, 1990, P.35.

4. Communication

Communication is a tool for personnel to express their opinions and points of view and deliver their proposals and receiving ideas from others and all data which they want to convey⁴⁵. Hence, it is a basic and essential activity to achieve work between managers and their subordinates or colleagues and to transmit points and directions or any proposals related to work. Good communication leads to developing constructive aspects of agreement and cooperation⁴⁶.

In other words, finding a common and close understanding between points of view as a result of exchanging views. This would lead to unified efforts towards easiest ways to achieve the common goals⁴⁷. Communication also leads to delivering information and data to provide the opportunity for personnel to express their views and proposals about all aspects of work and to keep such good view and proposals within organizing components in addition to benefitting from some good views and opinions in achieving the work⁴⁸.

The successful manager shall not depend on the transferred means of communication especially the polycyclic ones because it leads to changing or distorting the information intentionally or unintentionally and delaying arrival of the information. Therefore, it is advised to implement the method of continuous and sudden field visits and to personally monitor the important matters on site to avoid any changing or thwarting of facts. Such visits would also be a motive for the personnel to perform their work with high efficiency and on time and to write actual reports of progress of work.

⁴⁵Elshnwani, Salah, *ibid*, p.228.

⁴⁶Hahem, Zaki Mahmoud, *ibid*, p.462.

⁴⁷Elshnwani, Salah, *ibid*, p.228.

⁴⁸ *ibid*, p.229.

5. Motives

They are: (the stimulant which drives the individual towards achieving a certain goal by which goals of both the organization and the individual are achieved)⁴⁹. Goals of the organization are achieving highest economic return by reaching maximum possible production with lowest cost. And personal goals are achieved by providing proper work climate and satisfying his physical and psychological needs. Such needs are correlated with the ability of the organization in utilizing these incentives to increase performance⁵⁰ as individuals have different needs and take different actions and incentives affect them differently. In order for the organization to achieve its goals through incentives, it must first study personal needs and motives of the personnel and then decide type of incentive and best technique to get the intended behavior for the organization⁵¹. There are many types of incentives; some are positive and some are negative in terms of the goal.

6. Positive incentives

They are intended to impact the behavior of individuals by fulfilling their wishes and rewarding them by bonuses or promotions...etc. On the other hand, negative incentives are intended to affect the individuals behavior through punishment or deterrence by depriving from some benefits⁵². Selecting the best of these two types of incentives depends on the results of their applications. Negative incentive has quick responses but they are usually temporary and limited whereas positive incentive provides a higher spirit which increases productivity in long range in large degree⁵³. Incentives vary according to the type incentive whether physical or non-physical. physical incentives are the ones which fulfill the physiological needs for man like need for food or home or clothes...etc. on the other hand, non-physical needs include those needs which fulfill social and personal needs like the need to belong to a group, need for appreciation and appraisal, need for feeling satisfied,

⁴⁹Elsamrai, Moaid Abd Said and Naama Shalbia Elkaabi, Personnel Management, Baghdad, Central Labor Printing House, 1990, 1 M, p.152.

⁵⁰ ibid, p.152.

⁵¹Hashem Zaki Mahmoud, ibid, p.460.

⁵²Said, Salah Auda, ibid, p.312-313.

⁵³Hashem Zaki Mahmoud, ibid, p.452.

self-esteem...etc.. Examples for such needs also include appreciation, appraisal, promotion to higher positions and delegation of authorities and responsibilities⁵⁴...etc.

⁵⁴Said, Salah Auda, *ibid*, p.313-328.

2.2. Performance Appraisal

Performance appraisal is one of the most important processes applied by different organizations as many labor policies and procedures are based on it like employment, promotion, transfer, bonuses, incentives, training...etc. and due to the importance of such process, organizations give special attention to it in terms of accuracy of information which it contains and reflects its approved policy on such policy⁵⁵.

Performance appraisal helps organizations in decision-making and serves the employees at the same time where they feel that the management applies an accurate and efficient system in assessing their performance which pushes them to extend intensive efforts to reach the highest levels and in turn enjoy the benefits incurred on that appraisal such as bonuses and promotions⁵⁶ ...etc.

Hence, in order for performance appraisal to play its role, officers implementing this process must do it with complete enthusiasm, cooperation and belief and readiness to project strengths and weakness of their subordinates and must write down their notes clearly and definitively subjectively and without any nepotism⁵⁷.

2.2.1. First: Concept of Performance Appraisal

Performance appraisal is defined as the process by which personnel performance is evaluated according to their job tasks and responsibilities and in light of actual achievement of the individual and his behavior and performance towards the best which helps identify strong and weak sides of his activity to deal with the fault and enforce the strong points⁵⁸. Performance appraisal is also known as the system which helps measure and evaluate the relationship between personal performance of job tasks and responsibilities which he holds and the behavior and ability of the person for better performance, and the achieved results based on performance level and degree of actual achievement which helps identify strong points and how to invest

⁵⁵Elsamrai, Moaid Abd Said and Naama Shalbia Elkaabi, *ibid*, p.216

⁵⁶Said, Salah Auda, *ibid*, p.368.

⁵⁷Elshnwani, Salah, *ibid*, p.228.

⁵⁸Elsamrai, Moaid Abd Said and Naama Shalbia Elkaabi, *ibid*, p.217.

them and the weak points and how to avoid them in order to reach highest levels of performance efficiency⁵⁹.

Performance appraisal is also known as (getting certain facts and data) which may help analyze and understand and evaluate employee's performance to his job and his course and in a certain time period, and also evaluating his technical and academic efficiency in taking responsibilities and tasks of his present and future work⁶⁰.

Performance appraisal is also defined as the process through which the management tries to decide extent of competence and quality of the performance of the employee according to management policy. This process includes four stages⁶¹:

1. Defining standards intended for performance by the management.
2. Setting suitable tools to measure actual performance
3. Comparing actual performance with intended standards.
4. Implementing and monitoring procedures required to correct performance deviations and preventing them in the future.

2.2.2. Secondly: Obstacle Facing Performance Appraisal

In most cases, performance appraisal is not easy to define accurately and subjectively because employees' performance is not based on number of units produced or sold as nature of work is not conforming with that. For example, in administrative work where the employee joins a large number of other workers and that makes it difficult to define performance of each one of them individually. Therefore, most performance appraisals are based on personal evaluations which poses many obstacles to the process including:

1. The boss favors qualities which he likes:

⁵⁹Ismail, Mohamed Othman, Modern Introduction to Personnel Management, P.331, Referred to in Elsamrai, Moaid Abd Said and Naama Shalbia Elkaabi, *ibid*, p.217.

⁶⁰Mansor, Mansor Ahmed, General Principles In Labor Force Management, Kuwait, Printing Agency, 1979, 2, p.320.

⁶¹Elmansuri, Mahmoud Mohamed, *ibid*, p.1.

Some superiors who like certain qualities in their subordinates such as credibility, integrity, honesty...etc. Whenever any of these qualities are present in the subordinate, it may overshadow all other elements of the evaluation like work commitment and relationship with superiors or bearing responsibility...etc, and thus he gives him highest grades and vice versa⁶², Thus, this evaluation does not reflect reality and does not express real level of competence of the employee and that affects degree of efficiency and success of the evaluation process⁶³.

And in order to limit such favoritism, superiors must not follow their personal opinions and must not disregard their emotions when making the evaluation as well as distribute evaluation grades fairly based on its different elements and according to what is specified in the evaluation forms. Such deviation may be limited by evaluating personnel according to each quality separately starting from last factor to the last one, and then starts with second quality for first factor up to the last factor and so on until all qualities used in the evaluation are finished to insure application of one criteria for all personnel and not be influenced by certain qualities of some personnel⁶⁴.

2. Being influenced by behavior of personnel in the last period prior to evaluation:

Evaluation process is usually done for a certain period of time for six months or one year for example. However, the boss may be influenced by behavior of the employee in the last period right before the evaluation process. This may not intentional but is a result of forgetting the previous state of employee and taking into consideration only last state of the employee. So if the performance of the employee was high in the last period, that would give high grade even if his performance prior to that was low and vice versa⁶⁵.

⁶²Elshnwani, Salah, *ibid*, p.185

⁶³Said, Salah Auda, *ibid*, p.375.

⁶⁴Omar, Abdurahman Abdulbaki, *ibid*, p.332.

⁶⁵Elshenwani, Salah, *ibid*, p. 185.

And to limit that, it is advised that superiors shall divide the time period of the evaluation in parts and set estimations for each part from this period and the estimations are then added at end of the period to calculate their mean.

3. Personal Bias:

The boss may favor one employee or act against for reasons irrelevant to his performance such as his friendship, religion or educational level...etc. However, he cannot free himself from such bias and is affected in his evaluation of that employee accordingly. Therefore, the evaluation made by the boss may be subject to reconsideration before writing the report when he feels that there is someone who would follow up on him, and if that procedure would prevent the bias if the boss can persuade the superior body about accuracy of the evaluation which he implemented⁶⁶.

And to limit such bias, superiors may also be trained on making evaluation and clarify to them the objective behind it and the nature of the process and its principles, factors and how to make the report and set grades⁶⁷.

4. Deviating from right direction during performance appraisal:

There are some superiors who have a general tendency to giving high estimations to all personnel due to their feeling that their subordinates extend maximum efforts and that performance of some of them even if not reaching the required level it is due to reasons beyond their control or that they are very forgiving with their subordinates and don't want to deprive them of any job benefits which may result from making such reports like promotions or bonuses. Thus, those superiors usually give high evaluations to all of their employees. On the other hand, there are superiors who have general tendency towards giving low rates to all personnel due to their belief that whoever is working with them can always have better performance-or try to push their subordinates towards higher performance- where in fact the evaluation shall be

⁶⁶ibid, p.186.

⁶⁷Hashem, zaki Mahmoud, ibid, p.361.

based on reality and represent the real picture of what the employee is actually performing⁶⁸.

5. Influencing the boss by medium cases:

Some superiors have tendency to giving medium rates to all of their personnel based on their feeling that all are in levels around the medium level, or because of lack of sufficient time for the boss to implement the evaluation process accurately on the subordinates. Or may be due to his inability to define the real individual differences for his employees. Such approach underestimates overachievers and outstanding workers⁶⁹. On the other hand, the boss may intentionally take this approach to not show that some employees are outstanding and others are failures due to his fear from promoting the outstanding ones to higher positions and the failures would remain with him⁷⁰, and that taking such approach may lead to frustrating the outstanding employees and thus affect their performance negatively.

2.2.3. Thirdly: Methods of Performance Appraisal:

Methods of performance appraisal differ with the type of the personnel whose performance is to be evaluated in terms of nature of the jobs which they hold and levels of work which they perform. For example, the method that is fit for evaluating performance of employees of workers on production lines where the performance of the worker ends by physical units which can be measured qualitatively is not suitable in evaluating performance in supervising jobs in which the performance usually ends by results which are difficult to express qualitatively. In addition, methods of performance appraisal differ depending upon the different organizations and their working conditions⁷¹. And due to numerous and different evaluation methods, the organization must select the method that is most suitable with nature of the activities which the employees are doing and nature and type of its activities and other important factors. The researcher therefore shall address a number of traditional and modern methods as clarifying examples as follows:

⁶⁸Elshenwani, Salah, *ibid*, p.186-187.

⁶⁹Said, Salah Auda, *ibid*, p.187.

⁷⁰Elshenwani, Salah, *ibid*, p.187.

⁷¹Elmansuri, Mahmoud Mohamed, *ibid*, p.21.

A. Traditional appraisal methods:

There are several traditional appraisal method including descending order and mandatory distribution and critical events method and list method and balance method...etc. Thus, the research shall focus on the most important ones only including the following:

1. The Descending or General Order Method

This method is one of the simplest performance appraisal methods by which the boss arranges the personnel in descending order from best to worse respectively. He puts the best one on top of the list and the worst one in the bottom of the list while taking into consideration during the arrangement some factors like level of production, commitment, discipline and cooperation with colleagues. This kind of method shall preferably be used when number of personnel to be appraised is low and when experience of the boss about appraisal method and principles is lacking⁷².

However, such method is criticized for becoming difficult to apply when number of personnel to be appraised is high. Another criticism is that differences in competency between personnel are not exactly defined when comparing workers in different divisions⁷³.

This method is also criticized for not depending on subjective criteria in the evaluation which opens the door for the boss to be partial and get influenced by job positions. Also, this arrangement is considered impractical if the performed jobs differ from one another.

However, the disadvantages of this method may be reduced by following the following techniques:

1. When the number of personnel is high, the boss divides them into groups.
for example, the outstanding one, the intermediate and the weak ones, and

⁷²Omar, Abdulbaki, *ibid*, p. 339-240.

⁷³*ibid*, p. 340.

then arranges the personnel into each group separately and thus it is now arranged completely.

2. The boss selects the more and less competent personnel and then selects from the remaining the more and less competent and so on . this way he excluded the clearly competent and less competent until there is a remaining number of individuals very similar in their competence and thus can be easily arranged.
3. The boss makes double comparison for all personnel until the performance of each worker is compared to all workers separately and then arranges based on the number of times in which the worker is evaluated as being more competent than others.

2. Mandatory Distribution Method

Statistical studies of normal distributions of skilled personnel have indicated that in normal groups abilities vary by fixed ratios circling

around the mean and are less on the extremes. 40 % of the group individuals had medium performance, 20 % of the group individuals had high capabilities and same number were below average and 10 % of the group individuals had high capabilities and same number with low capabilities. The supervisors are obligated to distribute their estimates equally over these ratios to prevent them from giving their subordinates high rates or that most of their estimates are either medium or low. This method pushes them towards thinking and accuracy in selecting individuals in each group⁷⁴.

Although this method sets certain principles of evaluation, it is criticized for not giving the reasons for selecting personnel according to performance levels. Also, the distribution of individuals in each group may

⁷⁴ibid, p. 346-347.

Depend on personal judgment and thus lead to personal bias. Also, the number may be low to a degree not requiring distributing them by these ratios especially if most of them are competent⁷⁵.

3. Critical or Important Events Method

This is one on the most scientific methods if applied successfully which is summarized by opening a special register by the boss in which he writes down important events which the employee performs both positive or negative one by one to reflect his performance level. The registration shall include every event, its time, place and justifications and comparing them with the behavior which describes the required performance⁷⁶; ⁷⁷like:

1. Personnel behavior in facing work stress.
2. Reaction and ability to face situations.
3. Work accuracy and level of quality.
4. Taking initiatives, spirit of cooperation and creativity.
5. Ability to learn and benefit from experience
6. Ability to take decisions and make judgments.

With such information the boss is able to evaluate the employee very well and reflecting reality and staying away from personal judgment and bias. The boss must discuss with his subordinates these events and explain strong and weak point upon its occurrence to benefit the personnel in the future⁷⁸.

This process may seem difficult and burdensome to superiors but they should get used to it with time and it would not take long time if registered on time. However, some of the faults of this method include the boss being influenced by factors which

⁷⁵Elsamrai, Moaid Abd Said and Naima Shiba Elkaabi, *ibid*, p. 240.

⁷⁶*ibid*, p. 242.

⁷⁷Elmansur, Mahmoud Mohamed, *ibid*, p. 25.

⁷⁸Said, Salah Auda, *ibid*, p. 392.

make him disregard some events and concentrate on others. For example, he may focus on negative events and disregard the positive ones and vice versa⁷⁹.

Also, mentioning the event or the action is a real and subjective process but its interpretation may be affected by other non-subjective factors⁸⁰.

And in order to apply this method successfully, the following two conditions must be present:

The first one is the experience of the boss and his knowledge about accurate work details and their relation with other work, and the second one in the boss's perception and awareness of the events impacting employee's behavior related to his performance⁸¹.

B. Modern Methods:

Most traditional methods – which are based on evaluations of superiors- try to reach an objective evaluation and give a true estimation of the reality, but even with all of these efforts, the self-esteem and personal judgment of the person making the evaluation remains sensible. Thus modern managements have resorted to new methods to deal with the flaw of traditional methods by depending on a new behavioral approach called (management by objectives)⁸².

Management by objective method:

This method is based on joint self evaluation between the boss and his subordinates for each subordinate individually-where the boss explains the organizational chart and objectives and plans to be achieved- and then the process is implemented as follows⁸³:

- The subordinates set the objective which can be achieved during a certain time period (e.g one month, a year) and set the method of evaluating the

⁷⁹Elsamrai, Moaid Abd Said and Naima Shiba Elkaabi, *ibid*, p. 242.

⁸⁰Said, Salah Auda, *ibid*, p. 392.

⁸¹Junaid, Abdulmunem, *Personnel Management*, Cairo, 1983, p. 196-197.

⁸²Said, Salah Auda, *ibid*, p. 393-294

⁸³Elsamrai, Moaid Abd Said and Naima Shiba Elkaabi, *ibid*, p. 243.

performance and then is discussed with the boss to make necessary changes and approve it.

- Set tasks and duties based on the set objectives.
- Regular review is done for the set objectives and what has been executed according to set plan by both of them to overcome the obstacles or expedite its execution.
- Holding meetings between the boss and his subordinates for the purpose of forming final objectives and planning for next period when objectives of previous plan have been achieved. This method helps superiors plan and measure the performance in certain results suitable with the general plan of the organization and taking into consideration important aspects of production like the goods or services⁸⁴. The success of this method depends on three aspects⁸⁵:
 1. Management by objective forms a system to the management and not an addition to the boss's work.
 2. The boss who depends on management by objective as a management system for the organization must delegate the authority which he possesses.
 3. Management by objective requires a behavioral change on the part of the boss and the subordinates.

Advantages of management by objective method:

Management by objective includes a number of advantages⁸⁶:

1. This method is based self evaluation and not on personal evaluation. It also does not focus on the past but rather the future and tries to deal with any shortages there.
2. This approach helps personnel in setting more real objectives and drives them to translate their ideas into action and discovers organizational problems and finds their solutions.

⁸⁴Said, Salah Auda, *ibid*, p. 397A.

⁸⁵Abdullah, Shawki Hussain, *Personnel Policies*, Cairo, Nahda Arabia Publishing House, 1988, p. 155.

⁸⁶*ibid*, p. 155-156.

3. This method is considered a valuable tool to identify required training and active management development to be achieved.
4. This method expresses to the employee his personal performance to enable him to set range of development and improvement by comparing his performance with his personal objectives and not compare with remaining employees.
5. This method leads to improving performance to a better form where employees feel they have set objectives in front of them and strive to achieve them during certain time periods.
6. This method gives employees a more positive role in achieving objectives and gives them the freedom to act and depend on themselves in achieving the work because of clarity of objectives. This action is reflected on the spirit positively and makes the employee push towards achieving the objectives with great will and persistence.
7. This method develops leadership administrative qualities for the employee⁸⁷ and he feels responsibility and commitment

Disadvantages of management by objective approach:

With all above advantages, this approach has its flaws which include⁸⁸:

1. This method may cause conflicts and disputes between the boss and his subordinates and create an atmosphere of bad and tense relations between them when discussing setting objectives and work techniques and what has been achieved.
2. Goal setting is not an easy process. It is faced with different complexes in the executive jobs in the lower administrative ladder because of lack of set and definitive objectives for such works.
3. This method concentrates on intended results and does not pay attention to method or technique by which it is performed. Such focus may lead to harming performance on the long range. For example, using machines and equipment without paying attention to regular maintenance would harm

⁸⁷Elsamrai, Moaid Abd Said and Naima Shiba Elkaabi, *ibid*, p. 244.

⁸⁸Junaid, Abdulmunem, *ibid*, p. 199-200.

them on the long range, or they may be operated for time period longer than usual which would harm its production efficiency on the long range.

4. This method assumes that the boss has complete and accurate knowledge about tasks of his job, authorities and duties and must know the right way to achieve the goals of the organization. However, these assumptions are true with all superiors and some of them even don't have such qualities and thus can't apply them.
5. Applying this method required time and effort because of the discussions and negotiations done between the boss and his subordinates regarding the objectives to be achieved and the obstacles and problems which it faces.
6. Some superiors are not enthusiastic to apply this method because of its discussions and participation in taking decisions to achieve objectives by the subordinates because superiors are not familiar with this technique and because they have been used to practice control over the subordinate and by him although this method may become familiar overtime and the superiors may get used to it if the management is keen on its application.
7. The results of this method may be deceiving as there is a possibility of setting short range or simple objectives less than the normal potential or capabilities or vice versa⁸⁹. However, this possibility may be dealt with by discussion and agreeing with the boss to set the right standards for the right performance. By this we have completed the theoretical part and shall go on to the practical part for the field study.

⁸⁹Elsamrai, Moaid Abd Said and Naima Shiba Elkaabi, *ibid*, p. 244.

CHAPTER THREE

3. MEASUREMENT STANDARDS FOR PERFORMANCE EFFICIENCY IN PRODUCTION ESTABLISHMENTS

There are many standards and measurements used in measuring performance efficiency in production establishments. The selected indicators must be suitable with the nature and objectives of the production unit subject of the evaluation. These important indicators can be summarized as follows:

3.1. First: Production Energy Standard

The objective of all production units is utilizing production energy to the highest possible efficiency on different economic systems. However, it is extremely important in developing countries which have suffered from economic and social retardation in addition to limited economic resources in these countries. Such limitation calls for necessity of preserving good use of these resources and not damaging them by acquiring all available energies to upgrade and impact the production in quantity and in quality.

The importance of this standard stems from its strong connection with production energy from one side and between all cost and profits and sales from the other side. As whenever production increases (increase of percentage of utilizing energy) the one unit portion decreases from fixed costs through total distribution of the costs over bigger units in case of ideal use of energy and hence reaching flexibility of use and increase production units and fulfilling the needs of the society in terms of goods and services⁹⁰.

The concept of production energy indicator requires explaining types of energy. It is difficult to give a certain and accurate definition for production energy as there are many types of production energy and production energy may be defined as (the production capacity available in industrial establishment including the existing, new

⁹⁰Mosel University, Foundations of Industrial Economy, Mosel University Printing House, Iraq, 1983.

and deducted among ascertain productive technique. This capacity is measured and planned non-monetarily in the form of working hours or production units. And in order to understand this standard, we must know types of energy including:

1. Theoretical Production Energy

It is the production capability in maximum speed and continuously. It is done if the production unit or division produces 100 % of its named capacity. This is difficult to achieve in reality because it is an intended objective and is unreachable for the following reasons:

- a. Loss of time due to repair and maintenance
- b. Expectations resulting from labor competence
- c. interruptions resulting from shortage of raw material or supporting material or delay of their delivery.
- d. Interruptions resulting from failure or defects in machinery or their numbers.
- e. Work absence due to illness or different types of leaves.
- f. Organizational techniques which may hinder production process and ideal use of the energies.

Such tolerances reduce energy by a level that is called actual energy.

2. Practical (Actual) Production Energy

It is the theoretical energy minus tolerances which can't be avoidable. This level of limits for the energy (70 %-80 %) of the theoretical energy. In other words, the actual energy is equal to theoretical energy - the tolerances

3. Maximum Production Energy

It is the set production capacity during a certain time period according to production factors specifications with provision of a complete set of conditions including:

- a. Regular maintenance

- b. Trained production labor with high production efficiency.
- c. Supply of production accessories with set specifications.

Excluding in the calculation of maximum energy the part which can not be achieved due to the number of machines for industrial production and the maintenance. In other words, the lost time allowed technically. Therefore, we conclude the following:

4. Available Energy

It represents the maximum energy minus over traffic inside units or production centers based on production capacity for least stage or production process. Therefore:

The maximum energy matches available energy when there are no over traffic in some multiple production stages or operations.

These over traffic form shortage in production energy for a certain stage over production energy in previous or later stages.

5. Design Energy

It refers to production energy for systems and equipments in the establishment which the machines and equipments can produce according to their design and technical specifications. Hence, the design production energy means a regular industrial production without obstacles or difficulties in all stages of production. It is a stage that no industrial establishment can ready itself for no matter how high its performance can practically reach.

6. Planned Energy

It represents the production quantity intended to be gained from the goods and services during plan period. This would be done based on the design energy and

available energy in the establishment. As for the indicators use to measure performance efficiency through the production energy standard, they include⁹¹:

- a. Extent of utilization of the corrective energy practically= $\frac{\text{actual production}}{\text{actual production energy}}$. This indicator is an essential scale in the industrial planning process.
- b. The extent of utilization of available capabilities in the industrial establishment during a certain time period= $\frac{\text{planned production}}{\text{design production energy}}$
- c. Extent of execution of the goals of the plan= $\frac{\text{actual production}}{\text{planned production energy}}$. This is an important indicator in measuring industrial performance efficiency and shows the range of harmony between plan execution progress with its objectives or its use in monitoring execution of the plan.

3.2. Secondly: Productivity Standard

Production is a relationship between inputs and outputs, expenses and revenues, production quantity and number of machines, production quantity and number of workers. It is different from productivity as the later represent the semi-final process whereas productivity is the relationship between production and elements of the production process. Thus, it bears a more accurate evaluation than production in evaluating the establishment and labor efficiency and way of use of machines or raw material.

Therefore, productivity is used to express two approaches which are:

First approach:

As a measurement indicator of the efficiency of the establishment through the general approach for increase or decrease of its productivity which reflects the degree of

⁹¹Abbas Jabbar Ali, Evaluating Industrial Performance for General Company for Chemical Fertilizers, Economy and Management College, Bagdad University, 1978, Bagdad.

investment of the resources by the establishment. This is what is called total productivity approach.

Second approach:

As a measurement indicator of efficiency of one of the productivity process element inside the establishment and degree of utilization which is expressed as partial productivity. Partial productivity may be defined as the relationship between inputs and outputs. In other words, it is⁹²:

Productivity = production (outputs) / work + capital + land - primary preparation. Increase of total productivity may be achieved through the proportional correlation between inputs and outputs by the following:

1. When outputs increase by ratio more than increase of inputs
2. When inputs decrease while outputs stay fixed.
3. When output increase while inputs stay fixed.
4. When inputs increase by ratio more than increase of outputs.

Partial productivity:

Partial productivity represents the relationship between the outcome and one of the production factors as it is expressed in the following equation:

Partial productivity = outcome / one production factor

Thus, the process of deciding the wage inside the establishment is determined by several quantitative and qualitative considerations related to productivity, as the increase of the quantitative and qualitative level means direct increase of the wage. In this regard, we notice that increase of employees' wages goes through continuous increases by the following three stages:

⁹²Dr. Jasem Abdullah, Planning Production and Wages, Ministry of Planning, National Planning Institute, Bagdad 1984.

1. Direct relation for the working individual between quantitative and qualitative productivity and level of his wage inside one establishment.
2. Direct relation for the all employees between total quantitative and qualitative work productivity and level of their wages in one establishment.
3. Direct relation for the society between total social expenditure of the state in all social life aspects which aims to improve the welfare of the employees by providing them public services and improving them continuously. As this public social expenditure form unseen income for workers, and between the total work productivity on all society level.

Hence, we notice that increasing productivity is the deciding condition for social income growth. However, this depends on important economic factors. Labor wages must be increased according to affect and increase of productivity and the increase ratios between the two must not be equal. The increase in wages is strictly decided by rates less rates of productivity growth. Thus, wage increase seem to be associated with increase of productivity by dependent correlation and a lower level by necessity.

3.3. Thirdly: Added Value Standard

Added value is defined as (the production value which the establishment adds or contributes with other establishments in creating national product), or it is the production factors revenues (interests, rents, wages, profits). Therefore, the added value is equal to production value-value of production requirements which is the total added value. And if we excluded from it depreciation then the net forms the net added value. Hence, net added value = production value-value of production requirements the depreciation).

Added value for work factor = net added value / quantity of work done

This standard is one of the most important standards to judge the success of the industrial establishments especially in social societies where it can measure the importance of industrial establishment for the national economy and to know the quantity of contribution in this income as the added value increases achieved by

activity of the establishment it is safe to assume improvement of the performance of that establishment.

3.4. Fourth: Profit Standard

Profit term according to accountants refers to increase of sales value of the establishment from goods and services over the costs of production factors used in providing these goods and services. Profit is the surplus of costs and is equal to revenues. To measure profitability, there are different criteria which include:

1. Income power: Which means the ability of the establishment to generate profits.
2. Investment revenue: It is a very important measurement or depends on the theory of net overall profit.
3. Income power: The concept of income power is embodied in the ability of the establishment to generate profits from the work it performs. And it is the relationship between ability of sales dinar to generate profits and are gained by the following:

$\text{Net sales} / \text{net working assets} = \text{working assets turnover rate}$. Where the net sales is the total sales during the period subject of the study minus sales revenues and allowances. As for the net working assets, they are assets used actually in producing goods or service for which the establishment was originally established for minus depreciations. As the turnover of the working assets expresses number of times which the sales can cover establishment working assets or the number of times for use of working assets in generating sales. Naturally, whenever effect of number of sales generated by working assets dinar, the higher the size of profit generated by sales dinar and the ability of the establishment to generate profits increases with its income power. This correlation may be expressed as follows:

$\text{Income power} = \text{net profit before interest and taxes} / \text{net working assets}$.

3.5. Fifth: Invested Capital Revenue Standard

This criteria or standard is of great importance particularly in capitalist system where it is concerned and guided by maximum profit considerations. The production unit can achieve good revenue for its monies. It also has some importance in the socialist system where it is used as an indicator to assess current assets productivity in the production unit and then the extent of efficiency of these assets in achieving their ideal use. We can conclude from this that the indicator is used as a tool to identify performance efficiency in different countries with their different economic and political system.

The size of investment in the industrial establishment is considered one of the best principles in expressing size and capacity of the establishment because of its generality and comprehensiveness as it is expressed in the following form as investment revenue = profit / invested capital.

Where the invested capital = fixed capital + current capital and the higher the ratio of this factor the more efficient the performance. This indicator indicates speed or efficiency by which process of use of production unit assets in its operations is implemented.

3.6. Part One: Concept of Production Costs

Producing goods requires use of production resources and these resources have certain costs (prices). These costs form the benefits which can be gained from use of the resources in best alternative use for it. This is called alternative opportunity cost. The cost of use of certain production element such as (work) is the best use by which this element can be utilized. For example, the cost of worker in cement industry is what he could have contributed in another field such as agriculture.

Production costs whether explicit or implicit are the cash costs incurred by the establishment in the production process such as work bonus, raw material costs, fuel and transportation... etc. They are costs comprised of cost of establishment own resources which is what the establishment can get through the use of these resources

in another field. It is worth noting that time has an impact on production costs. Time factor affects the type of modification which can be made on different resources used in the production process. Some of these resources can be changed very fast and hence the level of production is change consequently where as other resources take longer time to change. For example, changing size of a certain plant. The production establishment, during production process, undergoes two stages. The short stage in which the range is too short to allow change of factory capacity but production level during this period can be changed by increasing or decreasing some variable elements used in the production. In the second stage, the long one, all production elements can be changed.

Types of production costs:

Costs can be generally divided into two main parts: fixed costs and variable costs. Fixed costs are those costs borne by the establishment whether it has or has not produced such building, machinery, depreciation, debts interests... etc. such costs are difficult to modify in the long range. On the other hand, variable costs are the ones related to production. They increase with increase of production like operation costs, fuel and transportation and similar costs. In the long range all costs become variable costs because it is possible to change nature and size of production during that period.

3.7. Part Two: Control of Labor Cost

Controlling labor cost is basically based on right information produced by the accounting system and submitted to the management in the right time. Therefore, the establishment management pays attention to rate of labor cost to the production cost. The factor manager for example usually needs to identify details of labor cost on divisions and production lines level divided into its two parts the direct and indirect. In addition, supervisors need those details in all of their activities (control of labor cost may be described on the basis that it is an approach or a state of mind completely similar to the activity)⁹³. The control process usually starts from the point

⁹³Dr. Ahmed Nuri Elsayed Abdelmaksud Bian, Accounting Principles for Industrial Costs, University Youth Printing And Publishing Organization, Alexandria, 1989 p. 463.

where there is a proper plan for production indicating labor requirement for this production expressed in manual working hours compared with costs of that labor. This plan is developed in advance prior to start of production. Efficient labor control may be achieved through planning production and using planned budgets for labor and wages and work performance report in addition to right system for paying wages and incentive bonuses to the labor. Labor control can be achieved through the collaboration of accounting division with other divisions and jobs inside the project such as personnel affairs division, time study and movement division, production planning division, planning budgets division and time recording division. We shall address these divisions in detail.

First: Personnel Affairs Division:

Supplying the establishment with human energy with high efficiency is one of the main tasks of personnel affairs division. Generally, this division is responsible for ensuring that the establishment is following certain policies regarding the labor.

Still, very few tasks relevant to that are implemented by knowledge of this division and its personnel. As work relations are established automatically through all company divisions and the relationship between the boss and subordinates there. The personnel affairs division focuses on personnel affairs in the human resources of the establishment including all tasks related to supply of those resources and employment procedures and training programs and job description and their evaluation and study of time and movement.

Human resources for the project can be supplied or new staff can be employed in it either for replacement or expansion purposes. If the goal behind employment was for replacement, the procedures in this regard shall start by a request from the division or the supervisor wanting the replacement filed or sent to the personnel affairs division. And if the job subject of the replacement would be filled by a promotion from a lower job, then the latter becomes the subject of replacement and so on until we reach the lower jobs subject of the replacement with appointment from outside of the project. On the other hand, if the employment was for expansion purposes, then that

requires an authorization from the upper management of the project. This authorization is achieved by calculating the human resources needs and taking the decision to fulfill these needs or provide them through appointment (1). The personnel affairs division in coordination with relevant division managers undertakes the task of planning the expansion needs and approve possible promotions for this purpose and count and set types of labor which must be appointed and dates of appointment and preparation for work of those labor.

The above activities are the cornerstone for the basic works related to accounting and control of labor costs.

Accounting of wages and salaries requires the relevant tasks in the next divisions:

- A. Time recording task division which include counting and collecting all times related to tasks and production orders, products, production stages or the divisions.
- B. Wages tasks division which include setting total and net wages for each worker individually and indicating details of wages and deductions and relevant bookkeeping.
- C. Cost tasks division which include recording labor cost on production orders, products, production stages or the divisions based on wage counting and distribution lists.

Based on the abovementioned, procedures of control and monitor of labor costs may be viewed from tenthree following angles⁹⁴:

- 1. Planning labor needs and taking executive procedures to supply this labor. These tasks are undertaken by personnel affairs division and planning and production scheduling division.
- 2. Use of labor and counting working time expended in the production and service activity. This task is undertaken by time recording division. This task include proof of payability and due payment for labor value who have

⁹⁴Ahmed Nuri Elsayed Abdulkaksud Bian, *ibid*, p. 265.

been hired by wages division who follows in coordination with time recording division the movement of the labor inside the establishment in general to count the time expended and define due value in the form of wages or salaries paid to the workers.

3. Measuring labor cost is attributed to tasks for which it was exhausted. In other words, measuring production and services and remaining project activities of labor cost expended in the establishment.

This task is undertaken by costs division through counting expended working times in every production matter or activity in coordination with time recording division and also defining rate of the wages for time unit or activity unit regardless of its type to measure time cost which have been counted on production orders and activities level. Finally, we shall address some of the problems related to measuring labor cost.

3.7.1. Wage Systems, Requirements and Objectives

Wage systems in modern existing projects with large production are associated a number of factor which affect it such as contract negotiations with employees and study of production efficiency and evaluating jobs and incentive wage plan and security level and wage consistency.

And since these wages are paid in return for works or activities performed by the workers, therefore, a motive which will push and encourage workers to give their best performance shall exist for wage systems.

And in order to create such incentive, a fair standard is required for the task to be performed regularly, so that the worker can overcome such standard and reach the stage or jump for which he deserves the incentive or bonus. Modern studies have shown that incentive wage systems are commonly applied in many industries in spite of the variance in construction degrees and the opposition coming from labor unions. Some of the requirements which must be met for incentive wages include:

1. The system must be applicable in the direction which would drive workers towards increasing their productivity.

2. The system must have financial capabilities to meet the payment incurred from workers exceeding standards set for their performance.
3. A fair performance standard must be reached upon which the actual payable incentive is exceeded
4. Bonuses must be granted by exceeding the standard immediately so that the workers feel the result of their success instantaneously and that would encourage them to increase or preserve this success.
5. The company shall have enough work to ensure the exploitation of the time bought from the workers.

The initial goal of incentive wages system is urging the workers to extend more effort and achieve maximum possible product to get highest wages. This will consequently lead to reducing production cost. And in doing so, the wage system helps ensuring increase of production and means of control of labor cost in a way leading to reducing production cost.

3.7.2. Learning Theory and Its Impact On Incentive Wages

Industrial projects intend to, from applying incentive wage system, to urge workers to extend more effort and achieve highest possible rate. Such goal achieves reduction in transfer cost by reaching higher production for the project with less cost. The concept of applying incentive wage system is based in most projects on the principle that physical drive is the basic motor pushing workers to extend more efforts. However, this concept is characterized by some shortcoming since efficiency of workers performance may increase automatically by training and learning and gaining experience as a result of doing the work over and over again without any physical incentive for that. Thus, linking physical incentive with extending more effort by workers or increasing production rate or with amount of decrease of time needed for production is inadequate as training and learning may lead to such result automatically.

The idea of learning effect on production came out in the thirties of this century which called for necessity of associating wage incentives or incentive wage system

with this idea so that the project is not obligated to pay physical incentives to workers without justification.

The concept of learning theory is based on a simple notion, which is that the worker gains more experience and skill as a result of doing certain work over and over again regularly. This means that the time which the worker spends in achieving some work would decrease gradually per work unit due to acquiring sufficient training from repeating this work.

3.8. Part Three: Learning Curve and Estimating Labor Cost

The main goal in many business establishments is achieving highest rate on the invested capital. In fact, by time such goal would not be sufficient to fulfill the needs of the establishment to achieve and continue its success. Hence, overcoming business obstacles and increasing productivity efficiency in workers and improving level of production quality form fields which assist in achieving higher degree of stability for management of the establishment.

It is worth noting that we find workers in different activities are able to achieve better productivity gains by increasing their experience in the nature of the activity or industrial process. Such experience leads to performing the work better and faster. For example, we see that the person who drives a car for first time faces many difficulties and finds hard to switch drives and speed and keep balance of the car, but with time he learns and after another period he gains confidence in driving the car by himself. This stage is the experience acquiring stage.

The same is true for workers in different production and industrial activities. studies in the field of aircraft industry in the U.S.A showed that cost of some production units tend to go down whenever experience of performance by workers increased in production of these units. That becomes clear from reduction or sizedamage or amount of wastes. Also, other studies showed that in certain industries cost element tend to go down by certain perimeters influenced by what the workers have gained in

terms of experience on new production line or nature of activity or from new work or new stage or new climate⁹⁵.

Consequently, and due to this experience, the cost goes down as worker's experience and learning go up about the process or the machine. This is expressed in what is called learning curve or experience curve which can be estimated with high degree of accuracy.

The costs which are associated mainly with the reduction process due to increase of level of experience are cost elements related to labor and what is related to time factor in particular the additional costs. As the worker's experience level increases, the amount of time expended by the worker in performing the production operation decreases.

And that in turn is reflected on the labor cost and other additional costs which would lead to reducing total cost for unit of activity. And in some industries, particularly the cement industry, the damaged or disposed cost is high and can be noticed during operation period in some of the production lines. This cost is highly influenced by level of experience and learning which the worker goes through during life time of the establishment. Many studies in the field of learning curve have shown that 80 % of learning curve is the common percentage between different industries. Usually, this rate for this curve is not lower than 60 and no more than 85% as the actual percentage depends on the situation and conditions of the industry separately. And in general, the more complex businesses require skilled labor which has an effect on the correlation between learning curve and increase of production. In the case of skilled labor, the productivity of the worker has reached the extent where increasing production does not cause decreasing average working hours for production unit or for that the learning curve shows clearly in case of non-skilled and semi-skilled labor also the curve shows state of manual routine work or the automatic work which depends highly on dynamics of the worker in operating the equipment and machinery. As for electronic industries or those which work through time management technologies systems, there is no showing of any field of applying

⁹⁵Mohamed Mahmoud Yusuf, *Modern Approaches in Administrative Costs and Accounting*, V. 1, Dawha, Hekma Hall, 1994, p.198.

learning theory because in such systems the focus of interest and production is concentrated on the machine or production line and not the worker. Therefore, the learning curve does not appear clearly in case of skilled labor or in case of traditional industries which depend highly on electronic and machinery work.

We notice that the learning curve appears clearly in case of continuous production for same producer as is the case in producing cement material by same machine and by same worker.

The following figure shows course of cost curve for two main factors which are accumulative production units (k) and which can be represented in the horizontal axis in the diagram no (2) and the second factor is average working hours for the unit (m) as a main axis.

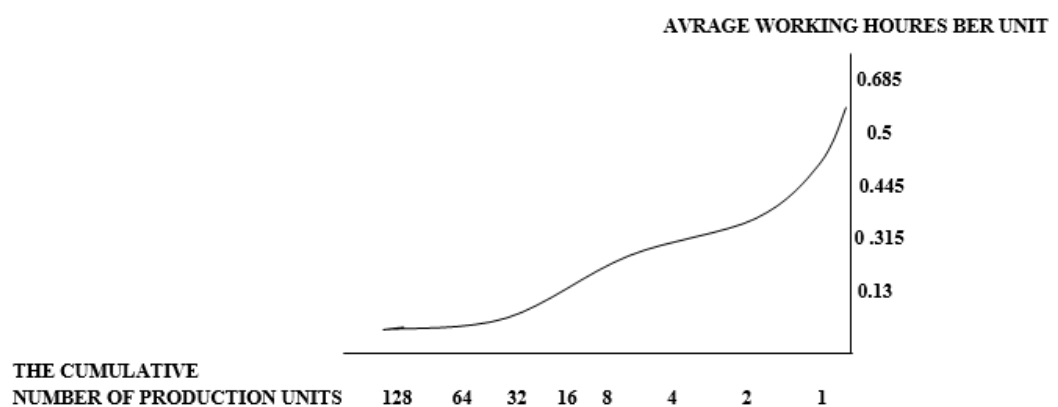


Figure 2.1. Learning curve by 80 %

Mohamed Mahmoud Yusuf, modern approaches in administrative costs and accounting, ibid, p.208.

CHAPTER FOUR

4. A PROFILE OF ARAB CEMENT COMPANY

4.1. Part One: Establishment of Arab Cement Company and Organizational Structure

1) Establishment of the Company and its Business*

the Arab Cement Company was established in accordance with G.P.C resolution No (77) of 1988 which stated the merging the national Cement Co. with Zliten cement factory in one company named Suq Elkhamis general cement and construction material co. and was later on changed to Arab Cement Company with its head office in Khoms. The Arab Cement Company is considered one of the largest active company in the field of cement and construction material in Libya. And from review of the articles of association for ArabCement Company approved by Mr. secretary of G.P.C for strategic industries—formerly- No (54) of the year 1991.

We notice that the ArabCement Company was established for the following main purposes:

1. Management of cement and lime affiliate companies and supply their required raw material and spare parts.
2. Setting required expansion plan including establishing new factories and production lines.
3. Supervising these factories and monitoring their different activities.
4. Setting all policies and plans required to achieve its goals.
5. Carry out all the necessary replacement and development operations for these factories and production lines.

and in the field of setting policies and planning production, the company factories were operated through yearly production plans prepared by production departments in the factory based upon targets and indicators preset by the company management

*Source: Arab Cement Co. records

and subsequently monitored by the management to assure implementation of such policies and plans and achieving the set objectives and to assist in overcoming any problems or obstacles in the way. Two types of plans are usually set; the first is related to production and marketing where production quality and quantity are set as well as sale and marketing methods and evaluating production plan. The second plan is related to financial aspects as budgets are prepared including the different revenues and expenses related to production which is called the financial plan.

As for the production plan, it is prepared as follows⁹⁶:

1. The general department for production and technical affairs of the company, in the last quarter of the year prior to the year of the plan, sets the targeted production percentage from the available production capacity for each company factory based upon the technical conditions of such factories taking into consideration the long stoppages for maintenance or replacement or upgrade of some of the main production units and submits the relevant report to company people's committee for approval.
2. After confirmation and approval production ratios targeted by company people's committee, new instructions are given to factories production units to set their production plans according to the set targets.
3. Each production department in the factory undertakes coordination and negotiation with relevant factory divisions to set and supply requirements of plan execution including labor, raw material and operation accessories and agree on the maintenance program during plan period.
4. The production department in each factory prepares draft production plan by setting targeted production and quantities of raw material and required operation accessories and scheduling off days for all production lines.
5. Following the preparation of production plan, the factory general manager approves it and transfers to general department for production and technical affairs in the company for consideration when making the overall plan of the company and submitting a copy to factory financial department for setting financial plan accordingly.

⁹⁶ Personal interviews with some managers of production units in factories

6. The general department for production and technical affairs sets the overall production plan company wise based upon the production plans submitted by factories and to transfer them to the company people's committee for approval and issuance of instructions to the general department of financial affairs to set the financial plan for the company with the (budget) required for execution and implementation of the targets set in the production plan.
7. After approving the overall production plan by company people's committee, the general department of production and technical affairs supervises and monitors the work of the factories based upon this plan.

As for the financial plan, it is set according to following steps⁹⁷:

1. After finalization of unified production plan procedures on company level and approving it by the people's committee, this committee submits the plan targets to the general department of finance in the company to set the financial plan (the budget) required for implementation of these targets.
2. The general department of finance issues instructions to factories financial departments concerning taking necessary procedures for setting financial plan or the estimated budge required to execute and achieve production targets in their factories.
3. The general financial manager in each factory contacts the factory general manager concerning formation of a committee to set the financial plan or budget for the factory.
4. The factory general manager issues a decision of forming a committee to undertake the preparation of the financial plan or budget for the factory.
5. The formed committee reviews the production plan for the factory as well as the budget and actual numbers for expenses and revenues for past nine months of current year to form a clear picture about average expenses and revenues.
6. The committee, based upon these averages, coordinates with and consults relevant departments and divisions for estimation of expenses and revenues

⁹⁷ Personal interviews with some finance department managers and heads of budget department in factories

required for implementation of the plan and distributing them over different items and then prepare the budget or financial plan for the factory.

7. This plan is submitted to factory general manager for review and discussion in a general meeting including all department managers and committee members and then agree to and approve it.
8. The financial department in each factory submits this plan to the general department of financial affairs which prepares the unified or overall financial plan for the company.
9. The general department of finance in the company submits the financial plan to the general assembly for confirmation and approval.
10. Following approval of the plan by company general assembly, the relevant departments take all necessary procedures required for its implementation both on company level or factories level.

4.1.1. Organizational Structure of Arab Cement Company

The ArabCement Company, as mentioned above, has four factories; Leptus magna cement factory, Mergeb cement factory, Zliten Cement factory and Suq Khamis cement and construction material complex in addition to some other general departments.

based upon the preliminary field study, it is clear that the organizational structure of the ArabCement Company is relatively stable and has been since its incorporation as no new factories have been established or added. And from review of the company organizational structure which was made by virtue of decision of Mr. secretary of G.P.C for housing and utilities No (83) in 1998 for forming of preparation committees of organization structures for sector affiliate companies which was approved by resolution no.(135) in 1998 issued on 13.8.1998 which shows that the organizational structure is comprised of the following:

Company People's Committee

Secretary Of The Peoples Committee Including:

1. Committee affairs office
2. Legal affairs office
3. Public safety and industrial protection office

Internal Auditing Including:

1. Internal auditing division, suq elkhamis complex
2. Internal auditing division, leptus magna factory
3. Internal auditing division, Zliten factory
4. Internal auditing unit, Mergeb factory

Information Technology Department Which Includes:

1. IT division, suq elkhamis complex
2. IT division, leptus magna factory
3. IT division, Zliten factory
4. IT division, Mergeb factory.

Company Office In Tripoli:

General department for production and technical affairs which includes:

1) Production Department Including

- a) production planning and monitoring division
- b) quality control division

2) Projects, Research and Development Department Including:

- a) research and development division
- b) project division

3) Gypsum Factory, Tripoli

4) Gypsum Mines Unit/Ber Ganem

5) Gypsum Mines Unit/Brak

6) General Department of Finance Including:

- a) general accounting division
- b) budgets division

7) General Department of Commercial Affairs Including:

- a) marketing department including
 - i) local marketing division

- ii) sales unit/ leptus magna and Mergeb
 - iii) sales unit/zliten
 - iv) export division
- b) procurement department including:
 - i) procurement and storage division
 - ii) L/C 's and customs clearing division.
- 8) General Department of Administrative Affairs and Labor Force Including:**
 - a) administrative affairs including:
 - i) staff affairs division
 - ii) general affairs and staff services
 - iii) public relations
 - b) producing labor force including:
 - i) training division
 - ii) producing labor force planning (staff)
- 9) General Administration of Suq Khami Construction Material Complex**
- 10) General Administration of Leptus Magna Cement Factory.**
- 11) General Administration of Mergeb Cement Factory.**
- 12) General Administration of Zliten Cement Factory.**

Figure (4.3) shows the organizational structure of the ArabCement Co.As for the internal structure of the factories which is part of the general company structure, there are three factories with same organizational structure which are leptus magna cement factory, Zliten factory and Khoms Cement Complex. And if we exclude the lime operation division and gypsum operation division which belong to the production department of Suq elkhamsis complex and not existing in Zliten and Leptus magna factories, then the organizational structure of these three factories is comprised of the following:

- Complex General Manager / Complex Including:
 1. Legal advisor
 2. Public safety and industrial protection office
 3. Laboratories and quality control office
- Primary Material Department Including:
 1. Mines and crushers division
 2. Equipment and material transportation
 3. Machinery repair division
- Production Department Including:
 1. Cement operation division

- 2. Loading division
- 3. Reporting division
- Maintenance Department Including:
 - 1. Maintenance studies and programming division
 - 2. Electrical and electronic maintenance division
 - 3. Mechanical maintenance
 - 4. Construction and utilities maintenance
- Financial Affairs Department Including:
 - 1. General accounting division
 - 2. Costs and store control division
 - 3. Budgets division
- Commercial Affairs Department Including:
 - 1. Local procurement division
 - 2. Stores division
 - 3. Delivery unit
- Administrative Affairs Department Including:
 - 1. Producers affairs division
 - 2. General affairs and producers services division
 - 3. Transportation unit

Figure (4.4) below shows the organizational structure of the three cement factories stated above (leptus magna,Zliten, Suq Elkhamis complex).

As for the organizational structure of the fourth factory which is the Mergeb cement factory, it is very similar to other three structures stated above. But due to its small size, departments of other factories are corresponded by divisions in this factory and the divisions are corresponded by units. Thus, we find that the Mergeb factory is made of the following:

- Factory General Manager:
 - 1. Legal advisor
 - 2. Public safety and industrial protection unit
 - 3. Laboratories and quality control office

- Primary Material Division Including:
 1. Mines and crushers unit
 2. Machinery repair unit
 3. External transportation unit
- Production Division Including:
 1. Cement operation unit
 2. Loading unit
 3. Reporting unit
- Maintenance Department Including:
 1. Maintenance studies and programming unit
 2. Electrical and electronic maintenance unit
 3. Mechanical maintenance unit
 4. Construction and utilities maintenance unit
- Financial Affairs Division Including:
 1. General accounting unit
 2. Costs and store control unit
 3. Budgets unit
- Commercial Affairs Division Including:
 1. Local procurement unit
 2. Stores unit
 3. Delivery unit
- Administrative Affairs Division Including:
 1. Producers affairs unit
 2. General affairs and producers services unit
 3. Training unit
 4. Transportation unit

4.2. Part Two: Development of Workers in the Company

The extent of labor development both local and foreign in the ArabCement Company can be identified from 1988 to 2001 by analyzing data stated in Table (4.1) below:

From review and analysis of data stated in Table (4.1), we can conclude the following:

1. The total size of labor of the company has seen positive development with some fluctuation from one year to another during same period, as it increased from 2232 worker or producer in 1988 to 2952 worker or producer in 2001 with a yearly average of 2663 worker or producer.

With regard to the total growth rate of size of labor, it has seen some fluctuation as it ranged from 3 % as a minimum in 1991 and 11 % as a maximum in 1994 with a positive average growth rate of 2 %.

2. The national labor size in the company underwent considerable development in (1988-2001) as it increased from 1607 worker in 1988 to 2718 worker in 2001 with a positive yearly average growth rate of 4 %.

As for ratio of national labor to the total labor of the company in 1988-2001, it also saw a considerable development as it increased from 72 % as a minimum in 1988 to 92 % as a maximum in 2001 with annual average of 83 %

3. The size of foreign labor saw some continuous decline during most of the period subject of the study even though it did increase in some years, as it went down from 625 worker or producer as a maximum in 1988 to 234 worker or producer in 2001 with a yearly average rate of 439. The growth rate ranged from 22 % as a minimum in 1996 and 9 % as a maximum in 1997, 1999 with a yearly average of 7 %.

As for total size of labor, it has decreased considerably as it went from 28 % in 1988 to 8 % in 2001 which indicate increase of national labor replacement to foreign labor. And that reflects growing interest of the company and focus on rehabilitating and training national elements.

Table 4.1. Development of national and foreign labor and total workers at the Arab Cement Company in the period (1988-2001)

Year	No. of Libyan workers	No. of foreign workers	Total workers
1988	1607	625	2232
1989	1682	639	2321
1990	1790	644	2434
1991	1728	644	2372
1992	1826	612	2438
1993	1947	510	2457
1994	2315	419	2734
1995	2463	372	2835
1996	2513	290	2803
1997	2597	315	2912
1998	2629	279	2908
1999	2677	304	2909
2001	2718	234	2952
Average	2225	439	2663

Source: Records of ArabCement Company

4.3. Part Three:Economic Importance of Cement Manufacturing in The Company

Cement manufacturing is one the large strategic industries which plays a big role in developing the national economy as it provides one of the most basic and essential products for the society which is cement used either as investment or productive product and is applied a mediator product in different industries. in addition, this industry plays a big role in exploiting local raw material economic resources and labor force and other resourceswhich has made it one the biggest contributors in generating revenues and developing gross national product and saving large amounts of foreign currency which would be spent on cement from overseas if it was not for this industry. Also, it was able to contribute largely in increasing exports and importing foreign currency during these years in which a surplus of production over the need of local market. The ArabCement Co. Is bigger than the Libyan Cement Company both in terms of number of affiliate factories and design capacities as well as the actual size of productionof these factories, and in terms of the investedcapital and size of labor in addition to its geographic location in the western part of Libya (highly populated region) and it ability to cover the biggest portion of local market

need of this product. And based on the contribution of this company in producing or getting revenues and providing work opportunities and solving unemployment problems. Moreover, the role it plays in exploiting local economic resources and fulfilling the needs of local demand and saving foreign currency and other forms of contribution. For all these reasons, the company is given great importance both on the economic and national level or on cement industry level.

a) Economic Importance of the Company on National Economy Level:

The economic importance of the ArabCement Co. on the national economy overall can be seen through the contributions of this company on main economic indicators such as production, national income, employment, providing work opportunities and covering the needs of local market for cement and saving foreign currency and developing exports and exploiting economic resources and local raw material and the ability to replace imports as follows:

1. Contribution to Production and Income

Based upon the review and analysis of data stated in Table (4.2), we find that percentage of contribution of company to production and income from 1988 to 2001 reached an average of (0.38 %).

2. Contribution to Employment and Work Opportunity

According to Table (4.2), we notice that the ratio of job opportunities by ArabCement Co. during 1988-2001 was an average of (0.2 %) of the total job opportunity in the national economy in general.

3. Contribution to Covering Local Market Needs For Cement Product:

Based upon the review and analysis of data stated in table (3), we find that the company has contributed in covering or fulfilling (59.3 %) of the needs of local market on the average.

In addition to these basic contributions, the company has been able to fulfill other contributions including:

- Exploitation the economic resources and local raw materials.
- Contributing to replacing cement imports, as the company along with other companies, Libyan Cement Company, has completely replaced cement imports and thus Libya has been able to achieve self-sufficiency in cement production and was even able to export it in some years.
- Contributing to reducing need of foreign currency
- Contributing to building and developing the infra-structure and construction and building sector which has contributed in solving housing problem.
- Contributing to introducing and developing technology of cement manufacturing and other complementary industries.
- Contributing to finding and developing rehabilitation and training programs and upgrading efficiency level of working technical staff.

Table 4.2. Economic importance of ArabCement Co. On national economic level in the period (1988-2001)

Production value in million dinars			Labor size in one thousand producer		
Arab Cement Co.	National economy	Company percentage to national economy	Arab Cement Co.	National economy	Company percentage to national economy
0.231568	963000	2230	0.450588	6547000000	29500000
0.231537	1002000	2320	0.451274	7224000000	32600000
0.238469	1019000	2430	0.560102	7820000000	43800000
0.233959	1013000	2370	0.382584	8900000000	34050000
0.233716	1044000	2440	0.445758	9135000000	40720000
0.220826	1114000	2460	0.590655	9288000000	54860000
0.237598	1149000	2730	0.327517	9914000000	32470000
0.23946	1186000	2840	0.363035	10583000000	38420000
0.24911	1124000	2800	0.320547	11783000000	37770000
0.239703	1214000	2910	0.285912	12976000000	3710000
0.218962	1329000	2910	0.421659	11986000000	50540000
0.213009	1399000	2980	0.446871	14286000000	63840000
0.199179	1461000	2910	0.330337	17800000000	58800000
0.317648	928700	2950	0.219654	17605000000	38670000
0.236053	1138978.571	2662.857	0.399749		39610000

Source: Political, economic and social transformation in 30 years in the period (1969-1999), p 678.

b) Economic Importance of The Company on Cement Industry in Libya

The ArabCement Co. enjoys a large status in the cement industry in Libya. Thus it is given highest attention proportionally and distinctively in this field. Such importance lie in the volume of its contribution in achieving cement industry objectives in Libya. The most important basis for this considerably huge importance shall be summarized according to study and analysis of data stated in Table (4.3) as follows:

1. The company has four out of the seven cement factories existing in Libya. Thus, it owns about 57.1 % of total number of these factories.
2. Ratio of company share capital to the cement industry capital was about 55.4 % during period of the study from 1988 to 2001.
3. The design capacity of company factories represents about 54.3 % of the total cement industry capacity in Libya.
4. The actual company production ratio during period of the study 1988-2001 to the actual average production of this industry was 59.3 % during same period.
5. The percentage of average sales of this company during period of the study to the average sales of the cement industry during same period was 60.8 %.
6. The average company labor percentage during period of the study 1988-2001 to the overall size of cement industry labor during same period was 54.3 %.

Consequently, and based on other principles and indicators, the company has been able to occupy the status mentioned above and hence was the focus of this study.

Table 4.3. Economic importance of ArabCement Co. On cement manufacturing level in the period (1988-2001)

s.n	Indicator	Arab Cement Co.	Total cement industry	Company percentage in the industry
1	No. of cement factories	4	7	57.1
2	Capital(in million dinars)	190	343	55.4
3	Design capacity for cement factories (in million tons)	3.330	6.130	54.3
4	Average real cement production(in million tons)	2.063	3.477	59.3
5	Average cement sales (million dollars)	45.101	74.203	60.8
6	Average labor size	2663	4901	54.3

Source: Production reports of ArabCement Company and Libyan Cement Co.General budgets of ArabCement Co. (1988-2001).Booklet issued by ArabCement Co.

4.4. Part Four:EvaluatingEconomic Performance of TheArab Cement Company

This part comes to discuss the actual performance efficiency of the ArabCement Co. during a certain period (1988-1997) by using performance efficiency criterion scale which we had already mentioned and approving the most essential and most important and the available field data taken out ofcompany records and shall go directly into the tables which we have developed to make it easy to infer the company data which have helped us in inferring and judging the performance efficiency of the company from it. The company data regarding productive cards were also addressed.

As for the number of employees and their wages and amount of production and production accessories and ruins and about the operating and fixed capital. Therefore, this chapter shall focus on following up the activities and performance of this company based upon its evaluation during the period (1998-1997) using indicators and criteria of evaluating economic performance both those related with production and production capacities and the one related to productive efficiency or those indicators related to financial ratios. As those indicators will calculated and their values shall be defined based upon the information and data available in company budgets and balance sheets and regular reports during the said period and then knowing extent of economic efficiency of the company.

This chapter was divided into three parts. The first part focuses on calculating production values and criteria and productive capacities, and to judge based on them the extent of economic efficiency of the company. Whereas the second part clarifies the indicators values and productive efficiency standards. The third part focuses on financial indicators and standards in terms of defining their values and ratios and using them to know the extent of the financial performance during this period*.

1) Evaluating company performance by using productive energy standard:

Economic units intend to exploit productive energy with highest efficiency in different economic systems. However, it has the most extreme importance in developing countries which have suffered from poor economic and social status. In addition to limited resources in these countries. Such limitation requires preservation of continuous good use of these resources and not overuse them by exhausting all available energies to upgrade and influence production quantitatively and qualitatively.

The importance of this criterion stems from being linked strongly with the productive energy from one side and all costs and profits and sales from another side. As every time production goes up (increase of ratios of use of energy), the one unit portion of fixed costs goes down through the distribution of the total costs over higher units in case of ideal exploitation of energy.

And by considering difficulty of measuring all inputs (production elements) with similar units, that makes it difficult to use the overall production which leads forcefully to finding special processes to transform the production into similar units. However, the multiplicity of inputs and their change requires use of values to represent them as some factors like (land value and weather condition in agriculture) which are very difficult to estimate when calculating productivity. Therefore, it is very easy to compare the outputs (production) with one factor instead of comparing them with many variant factors and that leads us to use partial productivity.

a). Evaluating company economic performance in the field of cement production:

* This period is the time between year of incorporation (1988) of the company and last approved budget (1997).

1. Designed capacities for cement production in the company reached (3750) million tons in the year 1990, and then it declined to (3330) million tons in the years 1988,1995,1996,1997. As this stability in productive capacities indicate that there are no new investments. The decline continued until it reached (3000) million tons in the years 1989,1991,1992. Refer to table (4).
2. The targeted production capacities for cement production in the year 1990 were (3750) million tons and declined to (3000) million tons in 1992 and continued going down until it reached (2124) million tons in 1994. Such decline was due generally to several important reasons and factors which include:

Table 4.4. Production capacities for products of ArabCement Co. (cement, lime, gypsum) in (1988-1997)

Capacities	Designed (ton)			Targeted (ton)			Actual (ton)		
Year	Cement	Lime	Gypsum	Cement	Lime	Gypsum	Cement	Lime	Gypsum
1988	3330	200	9	2880	100	9	1952	43	1
1989	3000	200	9	2650	85	9	2177	32	2
1990	3750	200	11	3750	125	11	2945	21	6.3
1991	3000	200	9	3000	100	6	2297	10	4
1992	3000	200	9	3000	50	6	2301	21	3
1993	3248	200	9	3124	75	6	2646	17	2
1994	2250	150	7	2124	75	5	1500	8	3
1995	3330	200	9	2830	100	6	1738	9	1
1996	3330	200	9	2830	100	6	1682	4	1
1997	3330	200	9	2580	100	5	1648	13	1

Source: Monthly and annual reports for the Arabian Cement Company

Old production lines in the plants especially in the furnaces as the targeted capacity ratio to the designed capacity for cement production in the company is very high which indicates that the company management is keen on using available production capacities as much as possible.

b. Evaluating economic performance of the company in field of lime production:

Based upon review and scrutinizing the data stated in table four, we observe the following:

1. The targeted capacity was 100 thousand tons with 50 % of the designed capacity for the years 1988,1991,1995,1996,1997. And then it went down with some inconsistency in increase and decrease due to low demand on the lime substance.
2. The actual capacity ratio to the designed capacity was 22 % in 1988 and continued to decline in most of years of the study until it reached its lowest of 2 % in 1996. This reflects the low performance in the field of lime production in the company due to low demand of this substance as there are other alternative construction material.
3. The ratio of actual or achieved capacity to the targeted one in 1988 was about 43 % and was characterized by inconsistent decline until reaching its lowest of 4 % in 1996. This reflects low efficiency of use of available capacities and failure to achieve the planned objectives due to latent factors behind the low demand and other alternatives and not seeking any foreign monies. Refer to Table (4.4) concerning lime production.

c. Evaluating company economic performance in the field of production of gypsum:

The performance of the company in field of gypsum production can be evaluated through the study and analysis of data stated in Table (4.4). As this table indicates the different company production capacities in gypsum production in the period (1988-1997):

1. The targeted capacity in 1988 was about (9) thousand tons with (100 %) of its designed capacity and it went up and down inconsistently. This decline of the percentage is due to old plants and frequent technical failures.
2. The ratio of actual or achieved capacity in 1988 was 11 % and increased until it reached 67 % in 1994,1991. And despite some improvement in using the targeted capacity, this ratio in general is considered acceptable to some extent during period of study which indicates that the company has not been able to increase its use efficiency of available capacities.

4.5. Conclusion

The targeted capacity ratio to the designed capacity for cement production in the company was (91.3 %) as an average if compare to the actual capacity with the designed which was (66.3 %) as an average or with the ration of actual capacity to the targeted (72 %) as an average, which means that production plans in the company don't reflect the actual plants capacities nor does it take into consideration the technical and economical conditions facing these plants, and that the this plan targets was put in way lacking accuracy of analysis and not based on real information and data expressing credibly the reality of the plants.

1. The ratio of actual capacity with both the designed capacity (66.3 %) and the targeted capacity (72.2 %) is considered acceptable under the current circumstances facing Libyan economy which has consequently been reflected in companies and factories especially with regard to foreign currency and the resulted delay in spare parts supply and technical operation accessories and delay in maintenance...etc.
2. Decline of economic performance level in the field of lime production in the company. As it is clear from the actual capacity ratio to both the designed and the targeted capacities where it did not exceed the average of 8.8 % of the designed capacity and 20.9 % of the targeted capacity.
3. Decline of economic performance level of gypsum production. As reflected by low actual capacities ratios to both the designed and targeted capacities where it did not pass 26.7 % and 36 % respectively.

4.6. Evaluating Company Performance Using Production Criteria

Productivity is a relationship and not just independent state. It is the relationship between inputs and outputs, expenses and revenues, production quantity and number of machines, quantity of production and number of workers, amount of production and working hours. It is different from production as the latter represents the semi-final or final process whereas productivity is expressed as the relationship of production with elements of production process and thus it is more

accurate evaluation of than the production in evaluating the company and worker efficiency and method of using the machine or raw material or the efficiency of using the unit or raw material or the efficiency of using the cash unit or the agricultural land area...etc.

Consequently, it becomes clear that the productivity is used to express two approaches:

1. First approach: as an indicator to measure company efficiency through the general approach of productivity increase or decrease in the company which reflects degree of investment by the company to its resources and that is what is expressed as total productivity.
2. Second approach: as an indicator to measure one of the elements of productivity inside the company and degree of utilization and that is called partial productivity. In progress of our study of professional training and its influence on production costs (direct work cost). In other words, the costs related to the human element on one side, and through our study also to partial productivity (work productivity) on the other side. Our study will focus exclusively on work productivity.

Since this productivity shows the relative relation between the product and number of employees. Here we shall note an important thing, work productivity has occupied a large and essential space in economic studies based on work efficiency which makes it a dynamic factor which can be improved continuously for productivity increase. Productivity increase is considered a general economic law for approaches of the society. This law depends on the social and economic characteristics and common production relations characteristics. In particular, the work element contributes through its performance efficiency to achieving efficiency of use of latest inputs. In the socialist system, the right conditions create continuous and fast increase of work productivity within the socialist production relations. Such increase in work productivity under socialist system conditions form an essential role in reducing production cost and raising revenues which insures continuous increase in social production and raising welfare and cultural level of the workers.

Table 4.5. Productivity of work element in (1988-1997)

Year	Amount of production (Dinar) (1)	No. of workers (2)	Work productivity (*) (1)/(2)=(3)
1988	3065000	2232	1373
1989	3192000	2321	1375
1990	4465000	2434	1434
1991	4968000	2372	1715
1992	8298000	2438	3404
1993	20238000	2457	2837
1994	6591000	2734	2411
1995	4631000	2835	1634
1996	1616000	2803	577
1997	1486000+	2912	510+

Source: Prepared by the researcher based on company records.

Productivity of work element (at multiple products)=amount of production/no of workers
 Fluctuation of yearly ratios for work element productivity and not achieving fixed and consistent rates as in 1988 it was (137.3) dinars and then increased to (823.7) dinars in 1993 which is the highest it was during the years and then it declined considerably in 1997 to reach (-51.0) dinars. That can be justified by instability of number of workers actually participating in the productivity process as their number increase lead to raise of portion for everyone of them in amount of productivity and that is what we notice from table (5). On the other hand, decrease of their number lead to increase of portion of everyone of them in forming the total production value during the period years as in continued going up until it reached (2912) worker in 1997 and after that the number of workers decreased until it reached (2803) worker in 1996 in comparison with 1995. on general average, we notice that productivity recorded its highest value (823.7) in the year 1993 whereas the lowest value was recorded in 1997 (-51.0) when the number of employees was (2912) worker comparing with other years too.

It can also be observed that the company has tried to achieve stability in controlling number of workers during the years 1990,1992,1993. refer to Table (4.6).

Due to the relative increase of paid wages and salaries, the wages dinar productivity was affected by that.

Table 4.6. Productivity of work element in (1988-1997)

Year	No. of workers (1)	Total production value (dinar)	Wages and salaries (dinar)
1988	2232	29493000	6097000
1989	2321	32628000	6486000
1990	2434	43827000	7860000
1991	2372	34046000	6125000
1992	2438	40721000	7509000
1993	2457	54864000	8722000
1994	2734	32469000	5890000
1995	2835	38423000	8123000
1996	2803	37101000	8141000
1997	2912	37339000	8289000

(*) The Source: Prepared by the researcher based on company financial statements.

Actual number of workers involved in the production

2) Evaluating efficiency of company performance using added value criterion:

Added value is defined as the productivity value which is added by the company or contributes with other companies in creating national product. In other words, it is the revenues of production elements (interests, rentals, wages, profits). Thus, the added value = value of production – value of production requirements which is the total added value. And if we exclude depreciation from it, then the net represents the net added value. hence, net added value = production value – value of production requirements + depreciation. the added value is considered the subjective base of calculating productivity of the work done as follows:

Work element added value = net added value / quantity of work done.

This criterion is one of the most criteria to judge the extent of company success as it is used to calculate degree of importance of the company in the national economy and to identify amount of its contribution in this field. As the added value increases

achieve through company activities, it would be an indication of improvement of company performance during period of study as follows:

1. Value of production requirements (goods and services) is continuously increasing during (1988-1990) as it reached its highest of (29484,000) million dinars. On the other hand, it declined in the year 1994 to (18069) dinars, and then continued increasing until 1997 where it reached its highest of (29708) million dinars since value of production requirements are connected with volume of achieved production and with cost of production requirements both goods and services. The reason behind the relative decline was due to value of production requirements in 1994 because of low production compared to the year 1993 only.
2. The depreciation value was steadily increasing during the period as it reached its highest in 1995 where it was (10293) million dinars.

This value formed a depreciation ration of 12.99 % from the value of the invested capital, as for the other years, it was 13.13 % for 1988, 14.37 % for 1989, 16.52% for 1990, 9.47% for 1991, 13.57% for 1992, 13.30% for 1993 and 9.91% for 1994.

Table 4.7. Net and total added value for ArabCement Company in (1988-1997)

Year	Total production value (dinar) (1)	Value of production requirement, goods and services (2)	Depreciation value (3)	Total added value	Net added value (*) (1)=(2/3)
1988	29493000	1972000	6708000	9773000	3065000
1989	32628000	21868000	7568000	1076000	3192000
1990	43827000	29484000	9878000	14343000	4465000
1991	34046000	24271000	5707000	9775000	4068000
1992	40721000	23132000	9291000	17589000	8298000
1993	54864000	24652000	9974000	30212000	20238000
1994	32469000	18069000	7809000	14400000	6591000
1995	38423000	23499000	1029000	14924000	4631000
1996	37101000	25851000	9634000	11250000	1616000
1997	37339000	29708000	9117000	7631000	1486000

Source: prepared by the researcher based on company financial statements.

(*) total added value=business activity revenue-value of production requirement

(*)net added value=total production value-(value of production requirement+depreciation)

Table 4.8. Depreciation at ArabCement Co. In (1988-1997)

Year	Value of invested capital(dinar)	Depreciationvalue	Depreciation (%) (dinar) (*)
1988	51090933	6708000	13.86
1989	52650986	7568000	14.37
1990	597877417	9878000	16.52
1991	60250550	5707000	9.47
1992	68451349	9291000	13.47
1993	74996361	9974000	13.30
1994	78765737	7809000	9.91
1995	79230437	10293000	12.99
1996	69541772	9634000	13.85
1997	52859395	9117000	17.25

Source: Prepared by the researcher based on company financial statements.

(*) depreciation percentage=depreciation value/invested capital value

In order to define the social surplus rate in the company for the same period by using net added value, we can use the following equation:

Social surplus rate=net added value/wages and salaries

And based upon the data stated in Table (4.9) concerning the social surplus, we notice the following:

1. Social surplus rate for the company in 1988 was (0.503) dinars and (0.492) dinars in 1989 and (0.568) dinars in 1990 and (0.664) dinars in 1991. it is also noted that the highest surplus rate was in the years 1992,1993,1994 because of decrease of wages and salaries in 1992 and increase of net added value in the years 1994,1993.
2. In general, the social surplus rates for the period of the study (1988-1997) are acceptable and within reasonable limits and free of any extreme differences despite their instability and not having fixed directions.

Table 4.9. Social surplus rate (*) at ArabCement Co. in (1988-1997)

Year	Net added value for the rate	Social surplus rate (*)
1988	3065000	0.503
1989	3192000	0.492
1990	4465000	0.568
1991	4068000	0.664
1992	8298000	1.105
1993	20238000	2.320
1994	6591000	1.119
1995	4631000	0.570
1996	1616000	0.199
1997	1486000-	0.179

Source: prepared by the researcher based on company financial statements.

(*) social surplus rate=net value/wages and salaries

4.7. Evaluating Efficiency of Arab Cement Company Performance Using Rate of Invested Capital Return

When analyzing data related to the invested capital and investment revenue rate based on the data of Table (4.10) we observe the following:

1. Even though the increases of the invested capital are not balanced in (1988-1997), there are not essential differences or increases except in the year 1995 where the value of invested capital was (79,230,437) million dinars which was the highest invested capital during that period, but it went down after that to (78,765,737) million dinars in 1994 and following that it also saw some decrease in 1993 down to (74,996,361) million dinars and continued the decline until it reached (52,89,342) million dinars in 1997.
2. In order to evaluate the efficiency of company performance in investing its economic resources to achieve the maximum net social profits, it is important to analyze the invested capital revenue rate. And with an analytical look we can observe the following (**):
 - a) The highest revenue was in 1992 where it reached (1.02) dinar and the net profit was (2,223,024) million dinars which is a very high net value compared with this year invested capital as the company achieved the

highest net profit during the period (1988-1997) in the year 1993 with (3,367,002) million dinars. This is due to increase of the invested capital and also the work element productivity. And for both revenue rates it was (98) dinars.

- b) the lowest revenue rate was in 1991 where it reached (0.14) dinars and the net profit recorded the highest decrease for this year as it was (273821)dinars. one of the real reasons behind such case was the increase of the invested capital and decrease of work element productivity at the same time. These two factors had a big role in weakening the financial status of the company and reducing its profits clearly for this year.

(**) invested capital revenue rate=profit/invested capital=net added value-wages and salaries /invested capital

Table 4.10. Investment revenue rate (*) at ArabCement Co. In (1988-1997)

Year	Net profit before tax (dinar) (1)	Total assets (dinar) (2)	Investment revenue rate % (1) (2)
1988	-9722478	201923715	-
1989	-6045525	194317132	-
1990	-2597885	226106668	-
1991	273821	201684664	0.14
1992	2223024	217844146	1.02
1993	3367002	343629154	0.98
1994	-521474	318433511	
1995	-5222478	321090717	
1996	-10055758	319731514	
1997	-15432663	232269872	
average	-4373441	257703109	0.2

Source: prepared by the researcher based on company financial statements.

CHAPTER FIVE

5. IMPORTANCE AND ROLE OF VOCATIONAL TRAINING IN LABOR DEVELOPMENT

5.1. Part One: Training Concept and Importance

The training job is one of the most important jobs for management and personnel (administrative affairs) and it is no less important or necessary for large and small enterprises. However, different size organizations usually take different techniques to achieve training requirements.

Large establishments cannot with their high capabilities provide internal training systems, whereas medium and small enterprises depend on specialized training institutions and centers outside of the establishment. The training job is complementary to selection and appointment jobs. Personnel management can not recruit and select and appoint employees only, but it is also necessary for these steps to be followed by developing training programs to help improve and increase employees skills and capabilities to perform the works assigned to them. Because the human element like any other production element needs care and development according to certain plans and programs. Such care shall be in the form of helping him to acquire new information and knowledge and provide him with modern techniques to perform the work and enhance his skills to execute whatever tasks and responsibilities required from him. Hence, training is a planned activity aims to provide individuals with information and skills which lead to raising individual performance rate at work⁹⁸. New personnel management approaches have given more attention with aspects related to searching those tools and techniques which may influence the behavior of the employed personnel in a way which makes such behavior in harmony with management interest to achieve certain goals.

⁹⁸ Dr. Salaheddin Abdalbaki and Dr. Abdul Hanafi, Human Relations Management. Modern Arab Office, Alexandria, p.251.

On the other hand, personnel working in the organization about its goals, decisions and policies helps greatly in raising the level of their loyalty to the organization and improve their morale. And that in turn leads to raising their work efficiency. When speaking about training concept, it is worth noting that there is confusion between training, learning and education.

learning means increasing general personal information and level of understanding the environment in which the learner received his education. There are many who states that the difference between training and learning is not accurately defined. As there is gradual transfer from learning general information required for the right performance of a certain work. And with regard to learning, it is the behavioral variables resulting from experiences undergone by the individual.

Hence, the difference between training and learning becomes clear, as training concentrates on acquiring or improving skills or knowledge in the working personnel. Whereas learning happens as result of knowledge and skills which the individual has acquired during this training and learning or both.

surely, training is an imminent and inevitable necessity. It would be done whether the management implemented it systematically, pre-studied and according to scientific basics and principles or not. eventually the individual will train himself by himself through his experience to a certain method in performing the work and staying in it if he feels it is the right work for him⁹⁹.

The real concept of training process is every work which shall lead to providing personnel with necessary information to insure tasks with all work details and conditions and creating technical and administrative skills needed by the establishment or changing points of views or beliefs in individuals or which may influence positively results of their work¹⁰⁰.

5.1.1. Planning For Training

⁹⁹ Dr. Salah Auda Said, Personnel Management, Open University 1994, p.227-228.

¹⁰⁰ Dr. Atef, Mohamed Abid, General Prince Authority For Printing Affairs. 1985, p.215.

In order for the company management to insure implementation of training programs in the area with the intended goals and with high efficiency, it should plan for such programs. The training process may not be done randomly. It requires pre-planning or else it would transform into unorganized activities leading to wasting money and human energy without making any gains.

Planning process for training include two main parts; the first is concerned with training needs, setting them and the techniques of identifying them. The second is concerned with procedures of designing training courses and providing the accessories needed for execution of these projects. We shall address in more detail these two parts:

1) Training Needs:

There can be no training programs without the need for the training. As defining whether there is or is not a need for the training is the base in any training process in general. It is the first step in the overall training activities. Actually, training is a continuous process in the organization as at the same time that new individuals need training to qualify them to perform their assigned jobs efficiently and successfully, we find that old individuals also need re-training to be promoted to other jobs or to deal with changes of work performance or in the production operations in general due to technological changes of used machinery and equipment.

2) Training Need Indicators:

Diagnosing the need for training lies within responsibilities of each manager in the organization. There are many indicators which show the need for training. Such indicators take the following forms:

- * Low production and not achieving performance rates by personnel set for them. such reduction in quantity and quality or the type may be an indication of need for training.
- * Increase of loss and damage incidents in dealing accurately with material are also indicators towards training.

- * Use of new jobs not previously used or the promotion movement in these activities which also create the need for training.

3) Identifying Training Needs:

Training needs refer to a group of required quantitative and qualitative variables in knowledge, skills, approaches and behavior of personnel in order to reach the intended performance levels and achieve work environment suitable and preferred by the organization¹⁰¹.

Estimating the needs of training programs by the organization must be done through setting the goal with the organization sees necessary to be achieved from this training. As these goals define the form of the program and its content. Upon agreeing on such goals with the management, the training officer must start collecting information about all departments:

- * Problems facing every department and reasons creating such problems
- * Skills and specialties available in each department and the readiness of every department to face work conditions assigned to them.
- * Needs of each department for skills other than the already existing.

These information are collected from many sources, the first is through meetings held with the training officer with division or department managers as those usually by their positions know exactly types of problems facing the work in their departments. Also, the aspect of skills lacking and required by the work are also searched.

Moreover, these needs are evaluated based on existing data and statistics in the company about production, expenses, number of work leaving cases and vacant jobs in the establishment and the requirements of those filling them and the recorded statistics about number of failures of machines and damage in material during operation and the high extension process.

¹⁰¹ Dr. Salah Auda said, *ibid*, p.248-250.

The training officer may, in his estimation of the training needs, seek assistance of studies which he develops about modern changes in scientific journals related to operations of the establishment and subjects included in the training program made by other companies¹⁰².

5.1.2. Designing and Planning Training Program

After defining all training needs by personnel management (administrative affairs), it move on to the next important steps in the process which is concerned with designing training programs and implementing them.

The process of designing the training program is considered the process of defining the required educational and training material already decided. The training program implementation process is made based on elements and contents of the program and adding disciplinary knowledge and skills in the trainees. And when designing the training program, this process must be founded on work analysis which the individuals will be trained on. Since the content and context of material of the training program is affected clearly by nature of the organizational level whose individuals will be trained. Also, individual differences of the persons to be trained must be taken into consideration when formulating the training program content in addition to their cultural differences and past experiences so as to focus on those aspects which represent weak points of the trainees and to reduce concentration of common aspects already known by them to avoid wasting time and effort. And when setting a training program, trainees requirements must be defined in terms of age, experience, qualification and cultural level to study the capabilities available in the organization both financial and physical and to also study available time required for implementation of the training program.

There is a unanimous agreement between most those concerned with training that it is essential to keep in mind the following steps when designing a scientific program contents:

¹⁰² Dr. Atif Mohamed Abid, *ibid*, p.517-518.

- * Define goal of the scientific program
- * Define trained individuals and requirements of candidate trainees.
- * Define subjects to be addressed in the training program
- * Define time requirement for implementation of the required systems and accessories.
- * Define names of trainees and lecturers
- * Define program cost and individual trainee cost.
- * Define trainees tasks during the learning course.
- * Implement tests on the trained workers and giving incentives for the first runners as an encouragement for future programs and in the work even if just as matter of formalities in order to give the training process its importance and status.

5.2. Part Two: Monitoring and Evaluating Training Programs

For any training plan, a monitoring and evaluation plans must accompany it. Being keen or achieving training goals requires continuing and monitoring the plan and evaluating its training activities to insure that it is going the intended direction and that achievement is made within its milestones while discovering weak points and any gaps which may interfere with the execution stage to deal with and correct, and to compare what has been achieved by training in terms of money and effort extended to make it successful.

Monitoring and evaluation requires setting two sub-plans to follow the training plan and complement it. one is for monitoring and the other for evaluation. monitoring and evaluating are two integrated processes intended basically to upgrade training and develop it and deal with any gaps discovered during its implementation and overcome any obstacles on the way.

5.2.1. Monitoring Training Programs

It is the controlling process of the plan to insure that the implementation is done according to the set milestones of the training plan until it achieves its final goal while interfering during implementation to remove any obstacle which may face the process.

The basic task of the monitoring process is collecting data, indicators and statistics which are essential for the evaluation process. In other words, monitoring serves the evaluation process and works to its favor. As monitoring is merely a group of procedures which insure the control of execution of the training plan and monitoring regulation of its activities and progress towards its goal.

The monitoring process aims to¹⁰³:

1. Follow implementation of training program to make sure it is going as planned and according to methodology.
2. Follow implementation of training program to make sure it is going within the time schedule and milestones.
3. Follow implementation of training program to make sure it is going according to set budget and that what is spent on training is not less nor more than the amounts included in the budget.
4. Immediate interference to help and remove any gaps or obstacles which may impede the execution.
5. Interfere to modify or develop any stage of execution.

5.2.2. Evaluating Training Programs

It is a process of measuring the extent of influence left by the training on the trainees and amount of perception or attainment gained from the training program and the new habits, skills, knowledge and approaches acquired by them as well as the type of new change in their behaviors.

¹⁰³ Ahmed Ibrahim Bashat: Principles of Training, Nahda Arabia Hall, First Edition, p. 291-202.

Evaluation is an objective process to measure efficiency of training work and volume of goals achieved from the training plan and highlighting weak sides and shortages to benefit from in developing and improving the training work.

It can also be considered a group of procedures to measure efficiency of training programs and degree of success in achieving the intended goals, and also the procedures to measure efficiency of the trainers and extent of change which training has successfully caused among them, and also a group of procedures to measure the efficiency of the trainers who implemented the training program.

The evaluation process aims to:

1. Identify how much of the plan has been executed and goals achieved
2. Measure validity of training programs and training techniques use in its implementation and how much they contributed to fulfilling training needs.
3. Evaluate efficiency gained by individuals who have been trained and to know the benefits they have received from training as well as measuring efficiency of those assigned to give the training work and how competent they are to do such work.
4. Insure adherence to training time schedule set for the training work.
5. Insure adherence to financial approvals set for expenses for training.

a) Monitoring and Evaluating Training Programs:

This process is implemented in three stages to measure efficiency of training programs their viability to fulfill training needs designed for it. this process is implemented as follows:

1- Evaluating Training Programs Before Execution

Training programs are evaluated before implementation for their soundness and achieving the objectives for which they were designed. and following the design of the training methodology which will have been designed originally to fulfill certain training needs. And after identifying type of training to be implemented and techniques to be applied and followed in the implementation, an evaluation is made

for each one to insure efficiency of types, texts and techniques and that they will achieve the training objectives.

2- Monitoring and Evaluating Training Programs During Implementation

For the purpose of insuring that implementation of training programs are in the right direction set for it and are within the time and budget limits and within the deviations allowed. This evaluation tests each step of implementation during the implementation to verify their execution according to set plan. The most important elements being monitored include:

- a) Completion of the administrative preparation to execute the training program in terms of place of the course and providing comfort for trainees and visual and audio first aids and place facilitations like warming and ventilation and preventing noise...etc.
- b) Degree of compliance to scientific and practical classes related to the subject of the training
- c) Compliance to time set for each training subject in the program and have accurate and successful in distributing time over elements of the subject matter based on its importance.
- d) Adhering to logical order of subjects of the program
- e) How successful are the training techniques in attracting attention of the trainees and their interaction with it, and have these techniques achieved the goal behind them in raising rates of trainees learning.
- f) Have all subjects to be covered by the program been covered ?
- g) How much did the training program benefit from training hours assigned for it?

3- Evaluating Training Program After Implementation

with the objective to measure what the training programs have achieved in fulfilling the training needs designed for it and how much it contributed in achieving the

general goals of the training plan. This process is done after completion of implementation of the training program directly and comprehensively¹⁰⁴.

- a) Discovering aspects of failure in the program design for the goal it was set for.
- b) Identify the essential changes in the scientific and practical classes to achieve full coverage of the training needs.
- c) Develop or modify or create training techniques to achieve full efficiency for the training.
- d) Amend the milestones of the program if necessary.
- e) Amend program subjects order if necessary.
- f) Reconsider the level by which the class is presented to suit it with level of the trainees if it is higher or lower than their level.
- g) Reconsider level of the trainers and lecturers and replacing them or training them if necessary.

The evaluation of training after implementation is done as follows:

- 1. Meeting with program supervisors, trainers and lecturers at end of the program to discuss with them and get their feedback on the program and weak and strong points and the shortages of the organization and implementation of the program.
- 2. Studying reports submitted by program supervisors.
- 3. Review of verbal and written notes from trainees or those which should be written down in the evaluation forms given out to them at end of the program.

b) Monitoring and Evaluating Trainers and Lecturers

Since trainers and lecturers are the cornerstones which implementation of any training program depends upon, and that any failure on their part in terms of efficiency, proficiency and capabilities poses big threat which would be reflected on the general level and lose confidence in them. Hence, extreme efforts and care are

¹⁰⁴ Ahmed Ibrahim Bashat, same previous reference, p.307-308.

extended in preparing them very soundly as any training program would be a waste of time if implemented by trainers and lecturers lacking personal qualifications and skills and experience in their field of specialty and complete knowledge of types of training texts and techniques. Trainers and lecturers are currently evaluated as follows:

1. Through the trainers themselves by evaluation forms given to them after end of each lecture or training session or evaluation forms given to them at end of each training program.
2. Through an evaluation specialist whose task is attending training classes and observing the trainers and lecturers during training.

And by these two methods we get the indicators which are the criterion upon which the trainees and lecturers are evaluated.

1) Monitoring and Evaluating The Trainees

there is no doubt that trainees are the essential element upon whom interests are focused and providing them with care, upgrading and rehabilitation through the use of aids and simple material including texts, techniques and training aids and competent trainers and wise management to implement the training program to fulfill the specific training needs of those trainees. It is also worth noting the issue of measuring work performance before and after training which is considered a tool of evaluating the training calls for the assumption that conditions were similar when making the measurement and that is difficult to define. As human sciences have not yet reached perfect success in using experimental methodology in this field. In addition, it is very difficult to find comparative numbers showing impact of training. Also, there is a lack of sufficient studies to show the effect of training on the job in comparative numbers. However, we cannot deny that it is influential on achieving sufficient productivity nor can we ignore the effect of other factors in contributing to achieving sufficient productivity. Thus, all efforts extended to measure the impact of training on the efficiency of personnel performance are merely efforts under process of research and study. And the techniques we are mentioning here to measure the impact of training is just one of those efforts which may be effective someday. And even though these

techniques explains to us this impact to some extent, we still can't identify it as a qualitative and sound criteria as it is available in academic research methodologies. Therefore, we have depended in the monitoring and evaluation of trainees on continuous observation of their behavior before, during and after training period and following their return to their jobs taking that as a criteria which indicates the extent of success of the training program in achieving the objective for which it was designed for and based on the fact that training contributes to the process of forming the professional and job behavior for individuals towards the better. And in order to insure providing guarantees for serious and efficient training, it is very important that it includes a monitoring and evaluation system on the job and following the trainees and evaluating them before, during and after training for the purpose of achieving the actual impact made by training on the behavior of the trainees.

a) Pre-training Monitoring and Evaluating of Trainees

This is done by knowing the aspects of deficiency in the knowledge and skills and approaches required for development and assessment. This process is done upon the identification of training needs mentioned above when we talked about training needs. The pre-training monitoring process of the trainee is done by cooperation between the training specialist and the direct boss of the each trainee. An evaluation of many training aspects is also done to know to what extent training may affect these aspects after its completion.

Evaluation of the trainee is made based on three main aspects including¹⁰⁵:

- Behavioral aspects of the trainee in terms of his loyalty to his work unit and his belief in its goals and his adherence and enthusiasm towards work and his cooperation with his colleagues and bearing responsibilities and his responses to his superiors.
- Performance aspects in terms of his current performance rates and his care to quality and improving his work continuously and to what degree he is

¹⁰⁵ Ahmed Ibrahim Bashat, *ibid*, p.321.

careful with the maintenance of machinery and tools which he uses at work and how careful he is to not have any damage or loss of his work.

- Information and experience which he had before training in terms of his knowledge about scientific theories at work and awareness of laws and regulations of his corporation...etc.

b) Monitoring and Evaluating the Trainee During and Until Completion of Training:

There is no doubt that success in defining training needs and selecting the right program in addition to having competent trainer and serious following up by the trainee during training insures the achievement of the intended goal. A primary evaluation process is done during the training activity. This evaluation examines each step to assess whether the expected behavioral change has been achieved or not. There are many techniques used in the evaluation and monitoring process which include:

1. Implementing oral or written test to identify extent of benefit gained by trainee from the program. Such tests are considered common tools in evaluating training activities despite all the criticism directed to them. However, if well prepared and executed, they may be a supportive factor in measuring training results. It is worth mentioning that the goal behind tests is not measuring the knowledge and information and skills and approaches gained by the trainees, but also the experience which they can apply in practical field. In other words, the latest information and skills they can apply at work. Tests can either be orally done through interviews or in writing for the purpose of knowing the amount of information gained or presenting one of the problems required to be solved by trainees.
2. The trainee fills out a questionnaire about his opinion on the program and how suitable it is with his readiness and tendencies and if fulfilling the skills which he was looking forward to developing and upgrading.
3. The trainee provides a brief report on the contents of the program and its importance and extent of his benefit from some or all of these contents.

4. The trainee is assigned to make and present a theoretical or empirical research in some of the courses related to the program.
5. Evaluating the trainees through observation during attending the training program by an evaluation specialist and the following form (table No.)used in monitoring and evaluating trainee during trainingby observation method.
6. Implementation through empirical application which is done by assigning each trainee by the trainer to give practical examples on theoretical principles dealing with the program and based on the work which the trainee actually performs.

c) Monitoring and Evaluating the Trainee After Completion of Training

According to this process, the efficiency of training is checked and the benefits gained by the trainees participating in the training programare identified as well as the impact of that on the regulating of the works which they were doing before training. Such monitoring contributes greatly in making a judgment on the soundness of the training program and to discover the weak aspects if any and then dealing with these aspects by correcting and developing. This type of evaluation measures the individual on the job and on site after the end of the training and his return to his work. Here, the training work is being evaluated in presence of the company so that the management can acknowledge the training feasibility. In this stage, the monitoring is concentrated on the method of performance and the behavioral aspects at work. It is either done by office or field monitoringor both. And becausethe field monitoring was not possible for all trainees on the job because that requires a large number of evaluation specialists, most monitoring is done usually through office method.As for the field monitoring, it is done through samples method as a kind of review of the office monitoring. Office monitoring is implemented in the form of regular reports made by the direct superiors of the staff who have been trained or may be in corrected forms to highlight the weak or progressive aspects which have been shown in the performance, behavior, skills and approaches of the trainees following the training.

If the office monitoring indicated any extreme cases of high deficiency in the behavior or performance of any of the personnelwho have been trained, and that the

results of his training were satisfactory, the matter requires field monitoring in the form of immediate visit to this case at work and making a detailed analysis to define the areas of deficiency and their causes, and whether it was related to the training or attributed to some other factors caused by the conditions surrounding this worker.

So if it is found out that the deficiency is due to the training programs, then this program shall be reconsidered if such deficiencies keep coming out and to also correct and develop these programs so that they achieve the object for which they were designed for and to also avoid such deficiencies leading to these cases. However, if it is found out that the deficiency is due to any reason other than the training, then the management is informed about the causes which may be found out at work to make the required correction and avoid them.

Monitoring and evaluation of the trainees may be implemented also after end of the training and return to their work through evaluation by subordinates to their bosses if the bosses attend the training program by handing out a questionnaire form to know the opinion of the subordinates intended to identify the changes in the approaches and behavior of their superiors after attending the training programs from the subordinates perspective.

5.3. Part Three Vocational Development Centers in Libya

Vocational development program is defined as a planned and organized effort to improve knowledge and skills related to work through provision of on the job technical rehabilitation for workers. And despite the difference in views about the concept and objectives of vocational development centers, there is an agreement that vocational development centers objectives generally include the following:

1. Providing training programs and activities on the job for all participants and involved individuals
2. Providing required consultancy for other vocational centers.
3. Providing and giving information and creating an awareness on effective programs.

4. Determine the necessary resources and the providing the information and technicalfor training programs.

One: national management institute:

The national management institute was established in 1953 in the city of Tripoli and was an affiliate of the civil service department in the federal government where it was aimed to train employees on accounting and bookkeeping and small management matters. And in 1964, the government then called a mission from the united nations to study the status of the management system in Libya. This mission recommended establishing a comprehensive general management institute to train all employees of different classesand the government approved this recommendation. In 1968, the institute was developed and the old national management institute was merged with the new one under the name of nationalinstitute for general management. A law was issued for its establishment no. (41) in 1968 with corporal body and independent budget.

After the Fatah revolution on September of 1969, the agreement with the united nations was canceled and the national institute for management was under the supervision of the minister of civil service.

In 1980, the institute is now belonging to the G.P.C for public service. the national management institute was reorganized and had nine branches all over Libya.

A resolution by the G.P.C was issued no. (474) for internal organization of the national management institute in 1981.

However, in 1987, a decision by secretary of G.P.C for civil service was issued no (125) in 1987 concerning internal reorganization of the national management institute as the decision stipulated establishing departments and divisions.

In 1990, the G.P.C issued decision no. (565) upon which the administrative development and improvement center was established to replace the national

management institute which belongs to the G.P.C of vocational rehabilitation and training with two branches in Benghazi and Sebha.

In 1994, the G.P.C issued decision no. (862) concerning general authority for labor force which made the center an affiliate of this authority.

Finally, the G.P.C issued decision no. (145) in 1426 by which the national management institute was established to replace the administrative development and improvement center with corporal body and independent budget and belonging to the G.P.C.

The long term goal which was intended by the national management institute and striven for was the development and upgrade of labor force to achieve better performance levels. It was the specialized technical and scientific system in this field and especially in training, consultancy, research and documentation all of which shall enhance administrative development and achieve the goal intended behind it.

1) Organizational Structure of the Institute:

The organizational structure of the institute is made of:

1. Management committee
2. Secretary of the management committee
3. Committee affairs office
4. Internal auditing office
5. Training and teaching faculty office
6. Academic affairs office
7. Training and job development department

This department included the following divisions:

- Training programs and courses division
- Job development division
- Elected individuals program division
- Tools and preparation division
- Administrative and financial affairs.

administrative and financial affairs department, which include following divisions:

- Administrative affairs and public relations division
- Financial affairs and stores division
- 1. Planning and follow up department
- 2. Information and documentation center

The center included the following divisions:

- a) Documentation and library division
- b) Prints and publishing division
- c) Data processing division

2) Activities of the Institute

The specific activities of the institute include:

1. Training

Training activity is one of the most important tools used by the institute to achieve its goals which it strives to manage and achieve. The activity of the institute may be divided into two categories:

a) General Programs

The institute organizes and holds training courses through the training plan made and prepared yearly. It includes training courses for the individuals elected by people and programs for upper leaderships and all different levels of employees in the public administrative system. All programs, conferences and general courses included in the annual plan are held in the institute building in Ain Zara area.

It is worth noting here that the institute management is very keen on delivering the annual training plan book for institute programs and activities to all ministries, institutions, entities, companies in different active sectors in the administrative system in Libya and in due time to enable them to coordinate and prepare for their employees nominees to get involved.

b) Special Training Programs

In addition to the general courses and programs provided by the institute, it holds many training programs and courses upon request and according to needs of the companies, establishments and different administrative units to fulfill their needs in the administrative fields, computers and English language.

2. Research and Studies Activities

The institute strives effortlessly by setting complete plan for researches and studies and defining the means and tools to ensure their success and implementing them through the teaching and research faculty and in collaboration with other research centers which are concerned with researches and studies in the administrative, financial and economic fields.

3. Consultancy

The center provides the following consultancy:

- a) developing organizational charts for ministries and companies.
- b) contributing in studying the setting of principles and standards to evaluate personnel performance and motivating them to work better.
- c) approving work systems which it makes or develops.

4. Documentation and Publishing:

The institute develops and prints and publishes some books and printings in accordance to common standards and specification of publishing houses. It also collects, prints and documents conferences and seminars.

Some of the most important publications by the institute in its field of specialty include a journal named (national journal for management) issued semi-monthly and is one of the specialized journals in administrative, financial and economic sciences.

5. Arab and International Cooperation:

The institute is very keen on enhancing and enforcing cooperation links on both the Arabic and international level and to deepen the effective interaction with institutes

and centers specialized in administrative developmentsuitable with the general goals which the institute strives to achieve and to also contribute to the service of his plans andprograms.

In this regard, the institute cooperates with many Arab nations in training, research and consultancy.

In addition, manycooperation agreements with international organizations and bodies specialized in management service. In general, the institute is very serious about continuing such cooperation withsimilar organizations and centers from overseas for following objectives:

- a) Getting opportunities of assistance of past experiences and experts from overseas.
- b) Providing training opportunities to brothers from Arab nations.
- c) Providing training opportunities or academic spots for Libyan staff overseas.
- d) Organizing and directing the benefiting process from experts and specialists of foreign organizations to exploit them.
- e) Coordinating with arab organizations concerning different activities for administrative development process in the Arabichome.

6. Rehabilitation:

One of the most important activities and field which the institute has been involved in addition to the basic activities, is the rehabilitation of labor force non-qualified individuals working in administrative unitsthrough the implementation of the advanced diploma in the two fields the administrative and financial. The methodology was consentedwith the different syllabus andapproved on 1.1.1986 by the secretariat of universities in order to undertake the task of improving and developing the scientific, practical and theoreticallevels of the male and female employees of the administrative system.

Two: Industrial Research Center

The industrial research center was established in 1970 in the city of Tripoli. It was an affiliate of the G.P.C for industry with the aim to provide technical and economic services to bodies involved in the industry both governmental and private in the field of investment increase of production quantitatively and qualitatively and upgrading productivity sufficiency and providing expertise and advice to achieve the goals of industrial development. The decision no. (1) in 1988 included an amendment of article (7) of G.P.C decision no (938) in 1984 concerning the assignment of a committee to manage the center whose formation shall be upon a decision by G.P.C and based on a proposal by G.P.C for industry. It is well known that the industrial research center being one of the cornerstones of industrial development which aims to providing technical and economic services to bodies concerned with industry and manufacturing sector and which are related to all aspects of application and practical industrial researches and through geological and mineral studies which aim to discover mineral wealth locations and fields of good use in addition to developing standard specification for investment and productivity increase goals both quantitatively and qualitatively along with providing technical consultancy to achieve goals of industrial development.

And based on belief in organized group work in forming technical work teams to undertake the studying of projects and specialized technical researches, it was necessary to get one of the members of teaching faculty at universities and different scientific research centers involved in this work to stress their role or working side by side with researchers of the center and industry sector to push them forward according to latest scientific techniques.

And as the number of decisions issued in the year 1987 by G.P.C for industry concerning formation of specialized committees including technically experienced staff from the industry sector, centers, university teaching faculty and scientific research centers, the industrial research center had an important role in such committees aiming to develop the industrial sector.

With the start of 1988, the center applied a new policy which had notable influence in achieving clear activity indicated from a number of decision of forming technical committees issued by G.P.C for industry or center management committee which prove the interest in the scientific side for many industrial project through the involvement of university teaching faculty and cooperation with other research centers in those committees.

From 1.1 to 30.6.1988, sixteen (16) decisions were issued by general secretariat of G.P.C for industry and from the center management committee for forming technical committees, five of which were chaired by teaching faculty members which clearly stressed the importance of connection between industrial research center and the university and other research centers.

The center has many ambitions which it strives to achieve topped by electronic and engineering researches and the executive board for engineering industries for the purpose of integrating the scientific side with the executive side in these two fields and to serve the industrial sector in the fields of electronic and engineering industries.

Achieving such ambitions requires overcoming all the difficulties and obstacles impeding scientific research particularly the physical and financial difficulties and to open the doors for researchers to acquire knowledge and complete their graduate studies and get trained.

The center has many capabilities which it depends upon in achieving its objectives and goals. The industrial research center has the latest and advance systems as well as skilled and competent technical staff able to implement assigned tasks and intended goals behind establishment of this essential utility in many fields like geological and mineralogy research, construction material, technical and economic researches and studies with participation from large number of universities teaching faculty and other scientific research centers.

1. Center Objectives

Objectives of the center include:

1. Development of national economy in Libya concerning all aspects of industrial researches and mineral wealth.
2. Providing technical, economic and consultancy services to bodies concerned with industrial sector.
3. Undertaking geologic mapping, researches and raw material excavation.
4. Registering and evaluating patent rights and providing expertise and advice to achieve industrial goals in Libya.
5. Implementing empirical researches with the aim to upgrade industrial products quantitatively and qualitatively.
6. Holding training courses to upgrade efficiency of the personnel in industry and mineralogy sectors.

2. Center Activities and Works:

To achieve such goals, the center undertakes the following activities:

1. Detailed and regional geologic mapping of Libya.
2. Locating mineral wealth and defining their validity for industrial purposes.
3. Implementing studies and researches related to geotechnical works.
4. Making and printing geologic maps and scientific publications.
5. Implementing development and empirical studies and researches on local products.
6. Making analysis and tests for industrial material and products to upgrade production quality and efficiency.
7. Verifying compliance with specifications for local and imported products.
8. Making technical and economic feasibility studies and preparing draft technical specifications for industrial projects.
9. Making studies related to production quality and dealing with problems related to it and disposing of choke points.
10. Organizing training courses related to rehabilitation of staff working in industrial sector and other relevant sectors.

11. Following up on scientific and technical training programs locally and internationally with the objective to train center staff and upgrade their efficiency.

5.4. Part Four: Financing Vocational Development Centers

Vocational training programs in general, and on-job staff training in particular face financial problems. As getting financial resources to implement training programs and activities is one of the difficult tasks. For example, financial budget allocated for vocational development in the national management institute represents small portion of the budget of G.P.C in Libya.

And in a study included more than “180” educational regions in U.S.A, the results showed that average of expenditures on educational training activities and programs on the job is less than ½ half American cent* of every dollar allocated for education. This shortage of expenditure and interest in on the job training trainers programs may be due to common understanding about most educators and prevailing in the minds of education leaders that on the job training activities and programs may not be necessary since the teacher already holds a certificate of preparation and an academic deed (Bachelors degree/diploma) which prove the completion of preliminary preparation and completion of first training. also, vocational development centers which pay attention to rehabilitation and training of trainers on the job may not be very important and in fact some consider it type of welfare and extra-curriculum activity¹⁰⁶.

And despite lack of financing resources for on-job trainers training programs, there have been many resources which have included support by individuals and organizations. In many instances, personal and voluntary support is the most important source of financing for on the job technical training. In fact, it is difficult to get physical support from local sources connected with these programs and activities. Hence, the central sources become better than the physical support.

*American Dollar Is One Hundred Cents, Its Bank Value is About 290 Dirham of Libyan Dinar. Libyan Dinar is one Thousand Dirham.

¹⁰⁶ Mohamed Hashem Falogi: On-Job Training, National Books House, Benghazi, Elfateh 1425, p.105-106.

In a general survey about methods of financing vocational development centers and defining sources of support for their programs and activities, it showed the following:

1. Despite the phenomenon of existing of numerous training centers all over the world and across the five continents and particularly the vocational development centers in Libya relating to cement industry, the physical support and financing resources are still very limited and well below the required level. It is usually done through the participants themselves or their employers.
2. Despite the low portion received for the training programs and activities at the vocational development center of the workers of industry sector in general and in cement industry in particular, these centers have provided new vocational ideas and have effectively contributed in developing workers and improving methodologies and upgrading learning efficiency of the workers and their quality of performance. The continuation of work by vocational development centers and spreading of their phenomenon despite the low support provided to them and lack of sources of finance, it is still a positive indication of their success and importance and the vital and leading role they play in training and developing the production worker cognitively, professionally, culturally and personally. The raging and strong will by worker of different classes (administrators /supervisors/technicians) and even society individuals who are involved in the production process to provide the necessary financing and help go forward and continue what they deem to be very necessary and important.

Part One: Vocational Development Centers Related to Cement Industry in Libya:

Vocational development program is defined generally as a planned and organized effort to improve the knowledge and skills related to the work by providing training activities and technical rehabilitation on the job for workers whether administrators, technicians or supervisors. and due to the relative importance of the Arab Cement Company and degree of its contribution in achieving gross national product in Libya, the revolution of 1969 took the responsibility of establishing many industrial

organizations to contribute to causing economic and social development in the Libyan society. And with the support from those organizations, many training centers were established to provide the competent technical staff through joint cooperation between them and the higher educational institutions in Libya. The Arab Cement Co. plan is associated with developing and upgrading workers of the industrial field in general and the training centers in particular based upon increasing demand of new knowledge from one side and the changing of role of the worker from another side. Industry demands have increased very fast during the last thirty five years, and with it the need to establish a system by which knowledge and new methods used in the industry has also increased.

Based on the fact that human resources are basic foundation for national economy and it is characterized by capability of growing, being dynamic, and ability to change. The biggest investment revenue is what is directed towards developing human wealth and upgrading their efficiency. consequently, human resources have stood out to be one of the basic foundations for economic and social development plans on the national level.

In addition, the importance of preparing the human element who can address information and deal with it to accommodate latest technological changes and achieve maximum benefit from the information. For that reason, the state pays great attention to developing human resources and has assigned a ministry and an authority to undertake the training responsibility in the government sector on the national level. It has also issued instructions to establish a training unit or department in every ministry (secretariat) or public body or entity.

5.5. Part Five: Objectives and Functions of Vocational Development Center

Although some training centers are managed in cooperation with the higher education institutions, others are considered an extension of higher education in nearby institutions and some are managed independently. Regardless of the objectives of vocational development center, they are usually directed towards fulfilling needs known to the entities financing these centers.

1) Industrial Researches Center

the industrial research center defines a number of objectives which it seeks to achieve including¹⁰⁷:

1. Developing national economy in Libya related to all aspects of industrial researches.
2. Providing technical, economic and consulting services to specialized entities in the industrial center.
3. Undertaking geological mapping, search and inspection of raw material and evaluating them.
4. Registration and evaluation of patent rights and providing expertise and advice to achieve goals of industrial development in Libya.
5. Implementation of empirical researches with the aim to upgrade level of industrial products quantitatively and qualitatively.
6. Undertaking training courses to upgrade employees efficiency in industry and minerals sector.

2) Specific Center For Cement Industry Training

This center strives to achieve the following objectives:

1. Preparing productive force for cement industry and construction material in mechanical, electrical and operation fields.
2. Developing training programs to upgrade employees efficiency in different companies.
3. Upgrading productivity sufficiency for workers by training them and getting them acquainted with techniques of simplifying and developing the work.
4. Monitoring modern advancement in different industry sectors and upgrading workers skills.
5. Developing supervising and leading skills and enhancing work relations.

¹⁰⁷ Center Records.

6. Organizing conferences and seminars in cooperation with some international companies and organizations.
7. Implementing academic studies and researches and providing technical consultation through specialized expertise houses.

3) National Management Institute

The national management institute is an academic, cultural and consulting organization concerned with development and improvement of labor force to achieve highest levels of performance. It is a specialized entity in this field and particularly in training and consultation, researches and documentation and everything related to supporting and enhancing administrative development and achieving the intended objectives.

The institute strives to achieve following objectives¹⁰⁸.

1. Upgrading employees efficiency in different administrative units, companies and public establishments in the different administrative, financial and economical fields with the aim to increase efficiency of the administrative system and good execution of development plans and achieving coordination and simplification and improvement of work techniques and its procedures and raising administrative awareness and spreading it amongst the employees.
2. Preparing labor force elements in different sectors scientifically and practically to enable them to bear responsibility and perform their tasks in such a way to upgrade performance level.
3. Upgrading and developing administrative work techniques for the purpose of involving modern technologies in the different fields of work.
4. Providing required assistance to different institutions and organizations in consultancy, training and research to develop them and improve their efficiency.

¹⁰⁸ Data Taken Carefully From Institute Records.

5. Documenting scientific qualifications and links and enhancing continuous cooperation between counterpart institutions and organizations inside and outside.

6. CHAPTER SIX

INFORMATION AND RESULTS ANALYSIS

This chapter presents an extensive analysis of information and data collected through a questionnaire designed especially for this purposes. We shall review the results concluded from fourteen (14) tables containing serial numbers from 11 to 24, and it is worth noting that number of respondents to each independent item of the questionnaire is not necessarily the same. In other words, the number of respondents in each table is not the same since not all respondents always answered all questions and with same number.

This chapter includes four main parts. the first part is concerned with qualities and characteristics of the respondents and provides background information on the relevant respondents with different professional qualities such as job responsibilities, academic level of the respondents, specialty, number of years of experience. Refer to table 11.

The second part of this chapter addresses views of the respondents about vocational development centers giving a descriptive survey of most important employees views towards expanding scope of services of the centers and the benefits resulting from such expansion. And to also define range of cost of such services for the participants including programs and activities of vocational development centers and reactions to that, and the ability of the workers to apply the experience acquired by training in their different educational situations and other attitudes which shall be addressed. tables 12:16 provides second chapter results.

The third chapter summarizes results of research questions which headed the inquiry and questionnaire, and provides an analysis for information resulting from responses of the participants and respondents on the programs and activities of the vocational development centers. tables 17:24 show results of part three concerning research questions including:

1. Best time for the activities (18,19)
2. Relationship of the centers with higher education institutions (Tables 21,21)
3. Academic degrees and certificates (Table 24)

1) Qualities of the Respondents

Based on the analysis of responses of the participants on the second question about age, we find that most of the respondents (170) who participated in this study are in an age enabling them to produce an having the sufficient experience as their ages ranged between 31-40. also, about (85) had enough work experience from 4-26 years in field of work.

The number of respondents who work in their field of specialties are about (66 %) more that those not working in their field of specialty which indicates interest of the company in employing human element ideally.

Academic Level

From the answers of the participants on question (5) in the questionnaire which reads: (what is the highest academic qualification you have?), table 11 shows very low number of employees having (masters degree) whereas the highest number had bachelor degree with additional courses. out of the one hundred and fifty (150) respondents, only 80 employees (54 %) had bachelor degree with additional courses whereas about (26 %) had either bachelor or master degree which is very low compared with other percentages which roughly exceeded 10 % even though the majority had non-university diplomas.

6.1. First Chapter Conclusion

By reviewing information, data and statistics of this chapter of the study concerning qualities and characteristics of the respondents and professional features of the sample of the research, the following results can be concluded:

1. The highest percentage of employees participating in vocational development programs and training activities on the job are those who work in their original field of specialty.
2. A very high percentage (54 %) of employees participating in vocational development programs and training activities on the job had primary university diploma with additional courses (master and higher sometimes)
3. A very high percentage (50 %) of employees participating in vocational development programs and training activities on the job had work experience between 4-26 years.

Table 6.1. Showing academic level (total number 150)

Factories	Academic Level						
	Below university level	B.A	B.S	Bachelor Courses	Masters	PhD	others
Suq Khamis	6	2	9		3		
Mergeb	25	11	10		3		
General administration	20	12	12		2		
Zliten	20	5	7		3		
Lubda	19	10	2		4		
Total	90	40	40		15		
% percentage	60%	21%	21%		10%		

Source: Made by researcher based on data from ArabCement Company

2) Respondents Attitudes:

Expansion of centers services: table 12 summarizes information related to replies of employees participating in the vocational development programs and activities on question six in the questionnaire which addressed the idea of (believes that vocational development center shall expand), whereas others reject the idea for many reasons) and when you think about this need, do you support the idea of expanding the centers or disagree?).

From the table we can observe strong support generally to the idea of expanding centers services. Out of one hundred and fifty (150) respondents, (145) agreed with

(96 %) to supporting vocational centers and expanding their services. The remaining low portion (4 %) represented the negative attitude towards the centers expansion and three respondents (2 %) rejected the idea as a whole. Two (2) respondents (2 %) did not give their opinion neither yes or no.

1. Advantages of Expanding Services of the Centers

Table 13 indicate degree of belief of the respondents in utilizing services of vocational development centers and vocational training programs and activities on the job after expanding field or scope of their work.

Question seven of the questionnaire is concerned with this purpose as it inquires about attitudes of the employees (do you feel you will benefit if current services of vocational development centers are expanded?)

The response to this question indicated that the majority of employees said that they would benefit from the expansion. Out of (169) one hundred and sixty nine respondents, (152) one hundred and fifty two employees (89,90 %) said they would in one way or another benefit.

On the other hand, very low portion (1,80 %) referred to not expanding services of the vocational centers, and another low portion (8,30 %) did not express their opinions towards the benefit from expanding centers services.

2. Cost of Use of Services of the Centers

Table 14 addresses financial cost paid by participants for using facilities of vocational development centers and being involved in their programs and activities. By analyzing information and data and statistics collected from responses to question fifteen of the questionnaire (in most instances where you received services from the centers, did you get it free of charge or with a cost?), it was found out that most of individuals of the.

Table 6.2. Showing centers services expansion (Total Number 150)

Workers attitudes	Arab Cement Company factories							
	Suq Khamis		Lubda		Mergeb		General administration	
	No	%	No	%	No	%	No	%
Strongly support idea	40	80	3.0	72	30	64	5	45
Weak support	10	20	10	23	15	32	5	45
Weakly reject	-0	0.0	1	2.5	0	0.0	1	10
Strongly reject	-0	0.0	0	0.0	1	2		0.0
No opinion	-0	0.0	1	2.5	-1	2		0.0
Total	50	100.0	42	100.0	47	100.0	11	100.0

Source: Made by researcher based on data from ArabCement Company

Table 6.3. Showing advantage from expanding centers services (Total Number 150)

Extent of advantage of expanding the centers	Factorirs								Total
	Suq Khamis		Lubda		Mergeb		General administration		
	No	%	No	%	No	%	No	%	
Very high	22	47.8	15	38.5	22	45.8	19	52.8	78
Low	17	37.0	19	48.7	22	45.8	16	44.4	74
No advantage	1	2.2	1	2.1	1	2.1	0	0.0	3
No opinion	6	10.2	4	6.3	3	6.3	1	2.8	14
Total	46	100.0	39	100.0	48	100.0	36	100.0	169

Source: Made by researcher based on data from ArabCement Company

Table 6.4. Showing cost of using centers services (Total Number 150)

Centers services cost	Factorirs									Percentage
	Suq Khamis		Lubda		Mergeb		General administration		Total	
	No	%	No	%	No	%	No	%		
Free services		0.0		0.0					0.0	
Less than 50%		0.0		0.0					0.0	
More than 50%		0.0		0.0					0.0	
Employers’ account	40	100.0	35	100.0	35	100.0	40	100.0	150	
Not known		0.0		6.0						
Total	40	100.0	35	100.0	35	100.0	40	100.0	150	

Source: Made by researcher based on data from ArabCement Company

Study sample received the service through their employer. As out of one hundred and fifty (150) respondent, most of them or say (100 %) received the services through their employer.

3. Approval of Form of Centers Services

Table 15 refersto attitudes of participants in development centers and on the job training programs towards a number of qualities of services centers. When the respondents were asked in the thirteenth question of the questionnaire about the qualities which they see (there are many qualities to the vocational development centers which may be important, please mark if they are necessary or important or not suitable), more than (97 %) of the respondents said that the activities (well organized) were necessary and very important and the other qualities which the respondents marked as necessary and very important included the following according to importance:

- a) Good organization (97.2 %)
- b) Practical and useful (93.0 %)
- c) Right time (84.7 %)
- d) Right place (84.7 %)
- e) Exchange of ideas (78.0 %)

Whereas the other less important qualities or not suitable in (participating in the planning) were (58.5 %) and the suitable for area needs with (22.3 %)

4. To What Extent The Information Of The Centers Are Applied

Table 16 deals with the information relatedto the ability to apply what the trainees have learned from the vocational development centers programs and activities in terms of knowledge and skills and attitudes in their daily work situations. And in their replies to question fourteen (were you able to apply what you have learned at the vocational development centers, most workers said they were able to apply what they have learned. And out of one hundred and fifty nine (159) respondents, one hundred and thirty six (136)which is (85.5 %) said they were able to do so.

Table 6.5. Showing importance of form of the services of the centers

Form of Activity	Very necessary		Very important		Some importance		Not suitable		Mathematical mean	Rank
	No	%	No	%	No	%	No	%		
Good organization	142	86.8	17	10.4	3	1.8	2	1.2	1.177	1
right place	82	50.3	56	34.4	23	14.11	2	1.2	1.663	4
Right time	99	62.3	48	30.2	10	6.3	2	1.3	1.465	3
Suitable with area needs	59	38.8	59	38.8	30	19.7	4	2.6	1.862	6
Practical and useful	102	65.0	44	28.0	8	5.1	3	1.9	1.439	2
Ideas exchange	66	42.9	54	35.1	29	18.8	5	3.2	1.825	5
Involvement in planning	27	17.0	39	24.5	66	41.5	27	17.0	2.585	7

Source: Made by researcher based on data from ArabCement Company

Table 6.6. Showing to what extent the information gained from the vocational centers are applied (total number 159)

Extent of application	Factories									
	Suq Khamis		Lubda		Mergeb		General administration		Total	Percentage
To great extent	13	31.0%	19	25.8%	25	52.0%	7	21.2%	64	40.2%
Somewhat	18	42.8%	14	38.9%	20	41.7%	20	60.6%	72	45.3%
To low extent	7	16.6%	2	5.5%	1	2.1%	1	3.0%	11	6.9%
No application	2	4.8%	0	0.0%	1	2.1%	3	9.1%	6	3.8%
Do not know	2	4.8%	1	2.8%	1	2.1%	2	6.1%	6	3.8%
Total	42	100.0%	36	100.0%	48	100.0%	33	100.0%	159	100.0%

Source: Made by researcher based on data of ArabCement Company

And by analyzing responses of the participants in each factory independently, we find that about:

- (73.8 %) of participants from Suq Khamis factory
- (91.7 %) of participants from Lubda factory
- (93.7 %) of participants from Mergeb factory
- (81.8 %) of participants in the general administration

Were able to apply what they have learned during the activities of vocational development centers to great extent or somewhat at the same time, very small percentage of workers participating in the activities of the centers said they were either unable or do not know whether they have applied what they have learned (26. %) suq khamis factory, (8.3 %) lubda factory, (6.3 %) Mergeb factory, (18.2) general administration

5. Awareness of Evaluation of Centers Activity

Table (6.7) shows possibility of evaluating programs and activities of vocational development centers on the job, and by analyzing information, data and statistics related to responses of the participants about the sixteenth question (are activities evaluated inside vocational development centers?)

It is found out that two thirds of the respondents confirm the evaluation process inside the center. As out of one hundred and fifty eight (158) participants, one hundred and four with (65,82 %) say that evaluation of the activities is done inside the centers. Whereas fifty four (54) participant (34.18 %) do not see evaluation in the centers or they are not aware of that.

Table 6.7. Showing awareness about evaluating activities of the centers (Total Number 158)

Evaluation in centers	Factories								Total	Percentage
	Suq khamis		Lubda		Mergeb		General administration			
	No	%	No	%	No	%	No	%		
No	20	48.8	30	85.7	31	66	23	65.8	104	65.8
Yes	5	12.2	2	5.7	2	4.3	6	17.1	15	9.5
Do not know	16	39.0	3	8.6	14	29.7	6	17.1	39	24.7
41	41	100.0	35	100.0	47	100.0	35	100.0	159	100.0

Source: Made by researcher based on data of ArabCement Company

1. Making the evaluation inside the centers:

(48.8 %) suq khamis, (85.7 %) lubda factory,(29.7 %) Mergeb factory, (17.1%) general administration.

2. Not making evaluation:

(39 %) suq khamis, (8.6 %) lubda factory,(29.7 %) Mergeb factory, (17.1 %) general administration.

6.2. Conclusion of Results of Second Chapter:

By reviewing information,data and statistics included in this chapter of the study related to defining attitudes of the respondents about some issues concerning vocational development centers and on the job training activities inside them, the following results may be concluded:

1. Most participants (87 %) supported the ideas of expanding services of the centers.
2. Majority of participants (90 %) referred to the advantage of expanding scope of services
3. A high percentage of workers (81 %) used facilities of the centers generally.
4. Most participants received services free of charge on account of their employers.
5. Indefinite percentage of participants approved the following qualities for centers services and ranked their importance in following order:

Quality

- a. Good organization (97.2 %)
- b. Right place (84.7 %)
- c. Right time (92.5 %)
- d. Suitable to area needs (77.6 %)
- e. Practical and useful (93 %)
- f. Ideas exchange (78 %)
- g. Involvement in planning (41.5 %)

Importance

- a. Good organization (97.2 %)
- b. practical and useful (93 %)
- c. right time (92.5 %)
- d. right place (84.7 %)
- e. ideas exchange (78 %)
- f. suitable to area needs (77.6 %)
- g. involvement in planning (41.5 %)

6. Most of the respondents (85.5 %) said they have the ability to apply what they have learned from centers activities in their work situations.
7. About two thirds of the respondents (68.80 %) referred to evaluation of training activities on the job inside vocational development centers.

3) The Right Times For Centers Activities

The nineteenth main question in the study addressed to the issue of defining the times which most suitable for participants in vocational development centers programs and activities. And shown in table 18, about (80 %) of the research sample individuals said that weekly working days (from 8 a.m to 3 p.m) is relatively suitable to provide vocational centers programs.

Out of one hundred and fifty (150) respondents, (70)(45.5) said that that working days (8a.m to 3 p.m) is very suitable for on the job training activities. Also, (43) respondents (29.3 %) that evenings of weekdays (5 p.m to 11p.m) is very suitable for such activities. however, in terms of the period which the participants would like to spend in each activity or program provided by the vocational development center, table 19 shows this activity estimations.

In general, respondents prefer on the job training activities which take shorter times. As about (56) respondent (38.9 %) said that the reasonable and acceptable period for any vocational activity must be around one to two weeks. On the other hand, period exceeding six weeks forms a problem for about (48 %) of the study sample.

Participants from the four administrative units expressed their wish to spend a period between one and two weeks in vocational training programs or a maximum of two to four weeks.

Table 20 addresses most important causes and factors which prevent participation in on the job training activities and programs of vocational development centers. And by analyzing information, data and statistics available we find that reason preventing workers from getting involved in vocational development programs are numerous as ranked below according to importance:

- a) (lack of time), as one hundred and thirty six (136) respondents (91.9 %) and median of 2.230 refer to it as a real problem

Table 6.8. Showing the problem of multiple activity times in the centers

Activity time schedule	Problem of multiple times						Median
	Not at all		Sometimes		Always		
	No.	%	No.	%	No.	%	
Week working days							
8 a.m-3 p.m	21	13.6	63	40.9	70	45.5	2.318
8 a.m -5 p.m	19	12.4	87	56.9	47	30.7	2.183
5 p.m -11 p.m	43	29.3	85	57.8	19	12.9	1.877
Weekends							
Saturday	26	17.3	97	64.7	27	18.0	2.007
Saturday and Sunday	26	17.7	53	36.1	68	46.3	2.286
Summer Holidays							
Other Holidays							

As the median decreases, the understanding of the respondents to the problem is positive.

Table 6.9. Showing the problem of length of activity period in the centers

Length of activity time schedule	Problem Of Length Of Period						❖ Median	Rank
	Not at all		Sometimes		Always			
	No.	%	No.	%	No.	%		
One-two weeks	56	38.9	81	56.3	7	4.9	1.660	1
Two –four weeks	32	22.9	90	64.3	18	12.9	1.400	2
4-6 weeks	27	19.3	82	58.6	31	22.1	2.029	3
6-9 weeks	22	16.1	55	40.1	60	43.8	2.277	4

Source: Made by the researcher based on data from cement Arab compnay

As the median decreases, the understanding of the respondents to the problem is positive

Table 6.10. Showing the factors preventing participation in the centers activities

Reasons for not participating	Frequency Of The Problem						❖	Median	Rank
	Not at all		Sometimes		Always				
	No.	%	No.	%	No.	%			
Center far from home	85	58.6	43	29.7	17	1.531	1.531	5	
Family commitments	27	18.5	109	74.7	10	1.884	1.884	3	
No means of transportation	103	72.0	34	23.8	6	1.322	1.322	6	
No time	12	8.1	90	60.8	46	2.230	2.230	1	
No physical incentive	70	48.6	61	42.4	13	1.604	1.604	4	
Too much work load	25	16.9	116	76.4	10	1.899	1.899	2	

Source: Made by the researcher based on data from cement Arab compnay

- b) (heavy work load, one hundred and twenty three (123) participant (83.2 %) and a median of 1.899
- c) (family commitments), one hundred and nineteen (119) participant, (81.5 %) and median of 1.884
- d) (No incentives), seventy four (74) participants (51.4 %) and median of 1.604.

The participants in the activities of suq Khamis,Lubda, Mergeb factories that (lack of time to get free from workload) is the main reason why they don't participate in vocational development programs, whereas the employees of the general administration consider (family commitments) as the main reason.

Relationship of the centers with higher education institutions:

To define the relationship between vocational development centers with higher institutes,colleges and universities, the researcher prepared a question inquiring the respondents attitudes towards this issue (is there any relationship or link between vocational development centers and higher education institutions?). And to deal more specifically with this variant, three sub-questions were given to the respondents:

- a) Relationship of vocational development centers with higher education institutions
- b) Future of relationship of vocational development centers with higher education institutions

- c) Type of services provided by higher education institutions with vocational development programs.

As table 21 indicates the relationship of vocational development centers with higher education institutions. And based upon information, data and statistics collected, it is clear that most higher education institutions, although not with same degree, have a certain relationship with vocational development centers (0.221 –s). among these institutions comes university of Garyonis in first place with a median of (0.209-s), and Fatah university in second place (0.006-s).

Whereas table 22 shows the future of relationships with higher education institutions. And as none of the participants showed interest in stopping connection and disassociate links between vocational development centers and university education institutions, a high percentage support the idea of increasing contact and enhancing relationships (3.595 –s). also, another number of participants propose continuing contact and communication with higher education institutions (0.029 –s)

Table 6.11. Showing the relationship of the centers with higher education institutions

Higher education institution	Median	Rank
Fatah university	0.006	4
Garyonis university	0.209	3
All of the above	0.221	2
None of the above	0.154	1

Source: Made by the researcher based on data from cement Arab compnay

Table 6.12. Showing the future relationship of the centers with higher education institutions

Future of the relationship	Median	Rank
Communication with higher education institutions	0.029	2
More Communication with higher education institutions	0.395	3
Stop Communication with higher education institutions	0.000	1

Source: Made by the researcher based on data from cement Arab compnay

Concerning type of services provided by higher education institutions to participants in on the job training programs and activities, it is observed from table 23 that all respondents (100 %) with median of 2.060 stated that all vocational development centers receive consulting services from higher education institutions. also, ninety four (94) participants (96.9 %) said that workshops and seminars come in second place in terms of importance of on the job training provided by higher education. Whereas equipment and systems come in third place as stated by (93/4 %) and in fourth place come the office services where (92.8 %) of respondents said so. the study units came in fifth place with (65.4 %).

Most managers of centers stress the existing strong relationship with higher education institutions and that these institutions provide different services including systems.

Academic Degrees and Certificates

Question number thirty three in this study addresses the issue of achieving a certificate or academic degree as a result of participating in on the job training programs and activities. And by analyzing the information collected from the participants in replying to the question (does participation in vocational development centers lead to getting a certificate or academic degree ?), it is found that out of ninety five (95) participant, eighty three (83) respondent (87.4 %) admitted not considering activities of the vocational centers as study units in on the job training. and that about more than one third of the respondents (37.8 %) confirm not counting them as study units in higher education where (64) participant (97.0 %) stress that they receive an appreciation certificate for participating in vocational training programs as shown in table 24.

Table 6.13. Showing type of services provided by higher education

Type of services	Method of provision						Total	Percentage	Rank	Median
	Not at all		Sometimes		Always					
	No.	%	No.	%	No.	%				
Study units (courses)	34	34.7	37	37.8	27	27.6	64	65.4	5	1.854
Office services	2	7.1	24	85.7	2	7.1	26	92.8	4	2.000
Equipment and systems	2	6/7	25	86.7	2	6.7	28	93.4	3	2.000
Workshops and seminars	3	3/1	91	93.8	3	3.1	94	96.9	2	2.000
Consultation	0	0.0	63	94.0	4	6.0	67	100	1	2.000

Source: Made by the researcher based on data from cement Arab compnay

Table 6.14. Showing the method and type of participation bonuses in the centers activities

Form of bonus	Frequency Of The Problem						❖ Median	Rank
	Not At All		Sometimes		Always			
	No.	%	No.	%	No.	%		
Units in training programs	83	87.4	11	11.6	1	1.1	1.137	4
Salary raise	10	52.6	8	42.1	1	5.3	1.526	3
Appreciation certificate	2	3.0	64	97.0	0	0.0	1.970	1
Units in higher education	37	37.8	61	68.3	0	0.0	1.622	2

Source: Made by the researcher based on data from cement Arab compnay,

6.3. Conclusion of Chapter Three

By reviewing information, data and statistics stated in this chapter of the study, the following results can be concluded:

1. information collected regarding most suitable times for participants in vocational development centers indicated that:

Most suitable times for on the job training programs:

- a. Evenings of working weekdays (29 %), weekends (17.7), weekends (Saturdays) (17.3)

- b. Large number of participants (38 %) prefer the activity period to be between one or two weeks. Suitable time periods encourage individuals to participate in vocational development programs.
- c. Factors which prevent the worker from participating include (lack of free time) (92 %), (too much workload) (83 %), (family commitments) (81 %), and (no physical incentive) (51.4 %).

2. Information collected about relationships between vocational development and higher education institutions indicate that:

- a. Vocational development centers have strong association with higher education institutions.
- b. Higher education institutions provide general services to the participants in vocational development centers such as (consultation services, workshops and seminars) (94 %) and office services and equipments (86 %).
- c. All participants and managers of centers want to increase contact and communication with higher education institutions.

3. The information collected about getting certificates and academic degrees as a result of involving participants in development programs showed that:

- a. Activities of vocational development centers do not lead to getting units in training programs.
- b. Most participants say that study courses, workshops and seminars provided by vocational development centers did not lead to getting higher salaries.

Based on answers to twenty second question, sample of study indicate that encouraging and inviting workers to participate in vocational development centers activities enable them to:

- 1. Increase course time and provide right transportation.
- 2. Concentrate on practical application like first aid and laboratories.
- 3. Granting physical incentives and appreciation certificates.
- 4. Providing means of transportation.

As for the twenty third question concerning the fifth hypothesis, the sample of the study answered that the morning period is the most suitable because the worker usually has many programs in the evenings such as rest and entertainment.

Whereas the sample of the study answered to question twenty eight concerning the fourth hypothesis (what is the role played by vocational centers in reduction of frequent work incidents?).

Vocational development centers have played a big role by developing capabilities of the workers and work simplification techniques which has led to reducing work injuries.

As the sample of the study say that vocational development centers has contributed to reducing work injuries greatly by giving training on industrial protection.

And based upon the response to question twenty seven concerning ninth hypothesis, the sample of the study replied that there is actually an increase in lost and damaged material which is an indication of low efficiency of the workers and one of the workers stresses that by saying (yes, it is an indicator of low efficient workers).

And upon inquiry of question thirty concerning eighth hypothesis (are training programs and vocational development considered an effective tool to reducing injuries and incidents ?), sample of the study replied that most workers (90 %) confirm that development centers are considered an effective tool to reduce injuries and accidents through what it provides in terms of training programs to all workers in different specialties.

And based upon answer of the sixth hypothesis (has vocational development centers contributed to raising efficiency of the workers ?)

The sample of the study replied that they were able to apply what they have learned in the activities of vocational development centers to a great extent or somewhat. At the same time, a very small portion of the workers participating in the activities of vocational development centers were not able to apply what they have learned.

6.3.1. Conclusions

This part of the study summarizes results of analyzing data and information and presents a conclusion to all four parts of the chapter:

1. Most workers (78 %) who participated in the study are of age which enables them to produce and have sufficient experience, as their ages ranged from 24-50 years.
2. Highest percentage (89 %) have completed their university study in addition to having passed considerable time seeking graduate studies and this in turn leads to performing their assigned works with no difficulty and that reduces costs.
3. Most workers (86 %) support the idea of expanding services of vocational development, and most of them (90 %) confirm that if expanded, the centers services will be benefited from. Also, a high percentage (85 %) found out that they were able to apply vocational development programs at their work.
4. Most view of the workers respondents agree that vocational development centers programs are well organized (86 %) and practical and useful (56 %) and suitable (62 %) and held on suitable time (62 %).
5. Most suitable times to hold training activities are during weekdays in the morning time from eight in the morning to three in the afternoon.
6. (38 %) preferred that length of one training activities from one to two weeks, as suitability of the time period encourages individuals to participate in vocational development activities.
7. Factors and reasons which prevent the worker from participating in vocational development activities include lack of free time (92 %), too much work load (83 %), and family commitments (81 %).
8. Vocational development centers have strong relations with higher education institutions.
9. Higher education institutions provide general services to participants at vocational development centers which include consulting services, workshops, seminars and office equipment and services.

10. Activities of vocational development centers do not lead to getting academic certificates but for vocational development of workers in form of appreciation certificates.
11. Some of the reasons preventing workers from being involved in vocational development activities include:
 12. Duration of course not sufficient (not more than two weeks)
 13. Family commitments
 14. Work overload
 15. No physical incentive
 16. Difficulty of organizing between attending the courses and doing daily tasks.
17. A high percentage up to (95 %) of the respondents admitted getting pass certificates for training courses or appreciation or gratitude letter. However, the physical incentives such as salary raise or getting financial bonus were not among answers of one of the trainees.
18. Traditional tests are the basic element of evaluation of process of the trainees. Also, monitoring the field trainees after their completion to the courses is almost non-existent.

6.3.2. Recommendations

Based on the results stated above, the study has concluded several recommendations which the researcher sees that they are important for on the job training and technical and technological rehabilitation. They are divided into recommendations for vocational development centers in Libya, and recommendations to the management of ArabCement Company, and recommendations for future researches. As for the recommendations of vocational development centers in Libya, the researcher, based on research results, presents the following recommendations:

1. This type of centers in the developing can provide worker with the opportunity to have a dialogue between themselves and experimenting new innovations in an atmosphere free of threat and discomfort. As the concept

of vocational development in developing countries is invaluable since sources of training required for worker in such countries are rare.

2. Vocational development centers must provide additional programs to factories and at site instead of holding them outside of the centers.
3. Ideal vocational development must be concentrated in centers equipped with required systems with modern educational material and making available consultation and specialized vocational personnel.
4. Results of this study indicate that there is support to the concept of vocational development centers.

As for the recommendations related to management of ArabCement Company, the researcher, based on research results, presents the following recommendations:

1. Upgrade level of exploiting available capacities at cement factory in Libya. This may be crystallized through the following:
 - a. Undertaking replacement and development of these factories so that they shall operate with their full production capacities.
 - b. Accommodate modern technologies in the field of cement production globally.
 - c. Ideal exploitation of main production elements (work, capital).
2. Providing skilled and specialized technical labor in cement industry by:
 - a. Setting a high level training program for local labor to gradually replace foreign labor.
 - b. Try to acquire skilled local labor in technical fields to train them and upgrade their efficiency.
 - c. Encourage skilled local labor psychologically to ensure their stability and not transferring to other sectors.
3. Concentrate on using modern scientific techniques in planning production and fully benefit from it in control activities and performance evaluation.
4. Raising level of actual production by supplying spare parts and operation accessories and limiting technical failures and expectations and using the human resource ideally.

5. Raising overall productivity for elements of production of the company and focusing on increasing net added value generated from company activity by:
 - a. Increasing cement, lime and gypsum production quantities.
 - b. Reducing costs and avoiding waste of production elements in terms of goods and services.
 - c. Paying more attention to training and development to upgrade performance efficiency and human resources productivity on different levels.
6. Giving attention to professional health and safety for workers and staff.
7. Giving more attention to providing general and necessary services to workers like transportation and healthful housing.
8. Raising fixed capital productivity from net added values through the raising of assets efficiency.
9. Try to achieve satisfactory profit margin to insure survival of the company and to help it renew its assets and make the necessary expansions in its field of activity.
10. Continue improvement of cash percentage in the company to insure that the company is able to pay its obligations from its funds and avoid getting loans.
11. Give attention to environmental conditions surrounding the workers during work and frequency of accidents and injuries such as lighting temperatures.
12. Management of the company must achieve a high degree of internal organization and arrangement to the factories. Also, organizing production plans and programs as that would achieve considerable improvement and development on professional safety level and in turn shall contribute to reducing work injuries and accidents.
13. Provide economic, cultural and educational services such as granting loans and providing libraries and daily newspapers and granting fellowship and study leaves to working personnel with aim of continuing their study and getting degrees from universities. In addition, nominating them to training and educational courses and bearing their costs to open the door for

personnel to develop and raise their production efficiency and improve their skills and experiences.

As for the recommendations related to future researches, the researcher, based on research results, presents the following recommendations:

1. Future researches shall focus on relationship between vocational development and higher education institutions.
2. Future researches shall consider vocational training activities. For example, we need more information on relation between participation in on the job vocational training and the performance of the workers.
3. It is highly important to implement a study on workers who have not participated in vocational development training. And comparing their skills and activity in the production process with worker who have participated in vocational development activities to highlight extent of efficiency of training courses and influence on workers behavior.
4. An evaluation must be implemented for current vocational development programs (on the job vocational training) in Libya to identify to what extent these programs are able to provide workers with skills, efficiency and vocational improvements. also, to identify whether or not these training and rehabilitation programs in Libya have been designed based on the actual needs of workers.

BIBLIOGRAPHY

1) Arabic references:

a. Books:

1. Aladili Naser Mohamed, organizational behavior management, no publisher or publishing place.p.1,1993
2. Elmansuri Mahmoud Mohamed, performance evaluation, a lecture given in a course, personnel management (2) at specific training center on cement industry.
3. Elshnwani Salah, personnel management and human relations, (into to goals),Alexandria, university youth institution, no print,1997.
4. Elisawi Abdurahman Mohamed, psychology and production, Alexandria, university printing, publishingand distribution house, no edition, no publisher.
5. Elsamrai Mohamed Othman,personnel management,Baghdad, central workers printing house, ed. 1, 1990
6. Ismail Mohamed Othman, modern approach to personnel management Cairo, nahda Arabia house,1986.
7. Junaid Abdulmunam, personnel management, Cairo, no publisher, 1983.
8. Dr. Jamil Ahmed Tawfik, principles of financial management, Nahda Arabia house for printing and publishing, Beirut,1984.
9. Dr. Hasan Mohamed Camal, financial analysis,trade college, Ain Shams university, Ain Shams library.
10. Dr. Khalifa Ali Daw, costs accounting, Jamahiria printing,distribution and advertisement house, Misrata,1977.
11. Dr. Suliman Hanafi Mahmoud, organizational behavior and performance, Alexandria, Egypt universities house, no edition,no year.
12. Dr. Shhada Naaman, climate geography (climatology), Aman, future publishing and distribution house, edition 4, 1996
13. Dr. Salah Auda Said, personnel management, open university publications, Tripoli, 1994.
14. Dr. Ashur Ahmed Sagar, human behavior in organizations, Beirut, university house, no edition,1989.

15. Dr. Allam Ahmed Khalid and Aismat Ashur Ahmed, behavior and environment improvement, Cairo, Egypt nahda for publishing and distribution, ed.1,1993.
16. Dr. Omar Abdurhman Abdulbaki, personnel management and human relations, ain shams library, no edition,1990.
17. Dr. Abdullah Shawki Husain, personnel policies, Cairo, Nahda Arabia house, 1988.
18. Dr. Farid Rageb Elnajar, theories and models of behavior science for management development and improving performance, printing agency, Kuwait,1977.
19. Dr. Mohamed Mahmud Yusuf, cost accounting, first volume, Hikma house,
20. Dr. Mohamed Mohamed Elsaid Eljazar, management accounting, Ain shams library, Cairo,1991.
21. Dr. Mohamed Hashim Falugi, on job training, jamahiria publishing, distribution and advertisement house, national books house, Benghazi,1425.
22. Dr. Mansur Mansur Ahmed, general principles in labor force management, Kuwait, printing agency, ed.2,1979.
23. Dr. Hilal Mohamed Abdulgani, performance management skills,no publisher, no publishing place,ed.1,1996.
24. Dr. Hashem Zaki Mahmoud, modern approaches to personnel management and human relations, Salasel house publications. Ed.2,1979.
25. Dr. Hashem Ahmed Hasabo, readings in cost management, Ain shams library, Cairo.

b. Journals and periodicals:

1. Dr. Ali Elslmi, performance evaluation within integrated information framework, management journal, volume nine, first issue, August,1983.
2. Nabil Tawfik Hasa, theoretical and empirical aspects of performance evaluation, management journal, volume sixteen, first issue, August, 1983.
3. Labor culture, seventh issue, Arab revolution printing house, Tripoli, February 1983.

c. Scientific theses:

1. Eltaher Ahmed Elkeri, Financial Analysis Tools and Their Role In Support and Guiding Investment Expenditure, an Empirical Study On Cement Sector in Libya, Unpublished Masters Thesis, Accounting College, Garian, 1998.
2. Mohamed Abdulhamid Mutawa, Indirect Industrial Costs From Car Manufacturing Co. inEgypt, Unpublished Master Thesis, Trade College, Manufia University, 1992.

d. Publications and reports:

1. Libyan Cement Company, a booklet issued by the company, Benghazi, 1993.
2. Suq khamis cementand construction material co., a booklet issued by the company on occasion of opening gypsumfactory in suq khamis, technical edition, Tripoli, 1976.
3. Suq khamis cementand construction material co., a booklet issued by the company on occasion of opening gypsumfactory in suq khamis, technical edition, Tripoli, 1976.
4. Arab Cement Company, a booklet issued by the company concerning projects which the company plans to offer for foreign investment, no publisher,no publishing year.
5. Zliten cement factory, booklet issued by the factory, no publisher, no publishing year.
6. Follow up reports of ArabCement Co. and its factories for different years.
7. Follow up reports of libyan Cement Co. and its factories for different years.
8. Industrial research center, a report issued by the center, Tripoli,1988.
9. Arab Cement Co. a booklet issued by the company about its business, construction partnership for technical media production.

2) Foreign references:

1. William Meglothlic (the professional schools), new York, the center for applied research in education,inc.1964).

ANNEX

The Questionnaire

Personnel questionnaire form

- Remarks and comments may be added if you wish
- The collected information is used only for the purposes this questionnaire was made.
- It is advised not to write name or address of the participant when answering this questionnaire.

Kindly fill in the following information about your esteemed self:

Factory.....department..... name.....

Job..... Time of experience..... supervising time of
experience (supervisors)..... age.....social
status..... Job class.....

Academic level..... major..... Courses
undertaken.....

Please put (x) mark next to right answer inside the square for the questions with answers, and write the response which you think is right from your point of view under the question without answer next to it. If space is not enough for the response, you can complete in any place of this paper making an arrow on place of the response and writing question number.

1- Personal information:

Please give following information by marking (X) in the right place:

1. Sex

a- Male ☐ b- female ☐

2. Age

a- 23 year or less ☐
b- 24-30 years ☐
c- 31-40 years ☐
d- 41-50 years ☐
e- 51-60years ☐
f- 61 and more ☐

3. What are your major responsibilities?
 - a. Factory manager b. administrator c. technician d. others

4. What are your basic job responsibilities within your scope of specialty?
 - a. Yes, major specialty ()
 - b. Yes, branch specialty ()

5. What is highest degree you have currently
 - a. Less than B.A/BSc ()
 - b. B.A /BSc. + courses ()
 - c. Masters ()
 - d. Masters + courses ()
 - e. PhD ()

6. It is believed that vocational development centers and their services should be expanded, whereas others oppose the ideas, what is your opinion?
 - a. I Strongly support the idea of expanding the centers and services ()
 - b. I support slightly the idea of expanding the centers and services. ()
 - c. I oppose slightly to the idea of expanding the centers and services ()
 - d. I oppose strongly to the idea of expanding the centers and service ()
 - e. I have no opinion, do not know ()

7. Do you feel you would benefit from expansion of services of current centers?
 - a. Yes, greatly ()
 - b. Yes, slightly ()
 - c. No, no benefit ()
 - d. No, I don't know ()

8. There are some organizations implementing vocational development programs, which of the following organization may provide better services (use numbers from zero to five noting that the higher the number the better the services).
 - a. Inside the factories ()
 - b. Higher education institutions ()
 - c. Vocational development centers ()
 - d. Others (explain) ()

9. Do vocational development centers have relations with higher education institutions?
 - a. Fateh university ()
 - b. Garyunis university ()
 - c. All of the above ()
 - d. None of the above ()

- e. With other specialized institutions ()

10. To what extent do higher education institutions provide following services:

	Always	sometimes	not at all
a. Giving study units courses	☐	☐	☐
b. Providing office services	☐	☐	☐
c. Teaching faculty	☐	☐	☐
d. Others (explain)	☐	☐	☐

11. Method of bonus for participation

In centers activities

a. Counted as on the job training program	☐	☐	☐
b. Counted as higher education units	☐	☐	☐
c. Financial sum lump bonus	☐	☐	☐
d. Granting appreciation certificate	☐	☐	☐

12. What do you wish to have expanded in the future?

a. Expanding program classes	☐
b. Communicate with higher education institutions	☐
c. Increase communication with higher education institutions	☐
d. Stop communication with higher education institutions	☐
e. Increase number of vocational classes	☐
f. Others (explain)	☐

13. To what degree do you agree on following qualities of vocational development centers?

Qualities	strongly	agree	agreedisagree
a. Good organization	☐	☐	☐
b. Suitable place	☐	☐	☐
c. Right time	☐	☐	☐
d. Suitable to area needs	☐	☐	☐
e. Practical and useful	☐	☐	☐
f. Ideas exchange	☐	☐	☐
g. Participate in planning	☐	☐	☐

14. Were you able to apply what you learned in the vocational development centers activities?

a. Yes, to large extent	☐
b. Yes, somewhat	☐
c. No, very little	☐

- d. Not at all ☐
- e. Do not know ☐

15. Most cases in which I received services from the centers were:

- a. No cost (free of charge) ☐
- b. Less than (50 %) of the cost ☐
- c. On your account ☐
- d. On employer's account ☐

16. Are vocational development activities inside vocational centers evaluated?

- a. Yes ☐
- b. No ☐

17. If yes, how are they evaluated, briefly?

18. What are the reasons which prevent workers from benefiting from vocational development centers activities?

Reasons	always	sometimes	never
The distance between			
a) The center and place of Residence	☐	☐	☐
b) Family obligations	☐	☐	☐
c) Non-available transportation	☐	☐	☐
d) Non-available time	☐	☐	☐
e) Non-available the financial incentives	☐	☐	☐
f) The large workloads	☐	☐	☐

19. What are the most suitable times to have vocational development centers programs?

Times	always	sometimes
a. 8 a.m-3 p.m	☐	☐
b. 8 a.m -5 p.m	☐	☐
c. 5 p.m -11 p.m	☐	☐
d. Weekends	☐	☐
e. Summer vacation	☐	☐

20. What is the right time period for vocational development programs?

Time period	always	sometimes	not at all
a. One to two weeks	☐	☐	☐
b. 2-4 weeks	☐	☐	☐
c. 4-6 weeks	☐	☐	☐
d. 6-9 weeks	☐	☐	☐

21. How can vocational centers win more participation from workers in its programs?
22. What are the recommendations and proposals which you see important to encourage and attract workers to vocational development centers activities?
23. What are the recommendations and proposals which you deem important for most suitable times for vocational development centers activities?
24. What are the recommendations and proposals which you deem important for relationships of vocational development centers with higher education institutions?
25. What are the incentives which you recommend to attract workersto vocational development centers activities?
26. What are the recommendations and proposals which you deem important for involvement of workers in designing, execution and evaluation of vocational development center?
27. a vocational developmentcenter may be typically described as?
28. Do you think development centers have contributed to reducing frequent work injuries?
29. Is increase of loss and damage in materials an indicator of low efficiency in workers?
30. Are training programs considered an effective tool to reduce accidents?
31. What are degrees and certificate which you achieved?
32. How many courses have participated in?
33. How long is your practical experience?

CURRICULUM VITAE

Name, Surname : Aiman Nasreddin Mohamed EDWEBI
Date and Birth of Place : 27.11.1990. Tripoli-Libya
Marital Status : Married
The Foreign Language : English
E-mail : aymenedwebi@yahoo.com

**Education**

High School : Tripoli School
Bachelor's Degree : Tripoli University

Work Experience

Work Place : Student

Publications

Do not have yet