

**Developing the Abilities and Skills of
The Human Capital**

An Analytic Study

By

Dr. Eng. Nader Riad

Developing the Abilities and Skills of The Human Capital

Contents

Introduction

- First: The Importance of Human Resources
- Second: Reasons behind the Increasing Interest in Human Resources Management and the Formation of Its Abilities and Skills
- Third: The Factors Affecting the Human Resources Management and the Formation of Their Abilities and Skills
- Fourth: The Importance and Goals behind the Abilities and Skills of Business Organisation Managers
- Fifth: Education and Its Importance in the Formation of the Abilities and Skills of Human Capital
- Sixth: The Importance of Training and Its Association with Education
- Seventh: The Importance of Information in the Formation of the Abilities and Skills of the Human Capital
- Eighth: The German Experiment in Preparing Work Force to Deal with the Trends of the Age and the Market Variables
- Ninth: The French Experiment in Preparing Skills and Expertise and Developing Education Trends for the Future
- Tenth: Experiments of Other Countries
- Eleventh: Summary

Introduction:

Human resources are deemed as top priority of contemporary global concern, since it is one of the most important elements of development and that labor force is the basic pillar of national economy for any given country. Undoubtedly, organizing human resources, employing it in a sound manner and refining its capabilities as well as elevating its skills play a great impact on maximizing the utilization of the country's national wealth and raising the living standards of its people. It is obligatory to focus on the preparation of comprehensive and aspiring programs of human development that are to be based on scientific methods. The World Development Report 1991 of the World Bank entitled 'The Challenge of Development' states that there had been a tangible progress in spreading welfare among humans during the 20th century. This progress was correlated with economic development. Governments of the world have been concerned about developing the quality of life through providing education, medical and hygienic care as well as pure drinking water, nutrition programs, family planning clinics and other forms of "investment in humans". Development indicators in the world showed that intensifying investment in humans is desirable and logical, not only from humanitarian perspectives but rather from the perspective of mere economic revenue.

In the light of the scientific and technological surge that extends to different aspects of life and depicts people's vision of the future, the capabilities and skills of human capital should be shaped in a manner that advances its capacity for assimilating facts of contemporary life and develops it in compliance with human development and its continuous challenges.

In the era of telecommunications revolution that has turned the world into a small electronic globe without borders and barriers and in the light of global modern technology, the issue of "shaping the capabilities and skills of human capital" is a top national priority that aims at creating the most feasible state of

complete homogeneity and close-knit coordination between the perspective and percentage of current huge development on one hand and the rate of potentials and capacities of the individual on the other hand. This comes in light of production circumstances governed by automatic equipment through developed giant robots.

Economic development is a result of a rise in the qualitative and quantitative productivity of the individual, which is the natural outcome of his skills and capabilities. Thus "shaping the capabilities and skills of human capital" is the determinant of achieving economic development and defining the country's position and its productive status on the global map. Growing concern about human resources was transferred from governments to various business organizations, including the largest as well as the smallest ones. Wise administration that sought to achieve excellence and distinctiveness in markets and revenues realized that the decisive factor in achieving this goal lies in the presence of trained individuals of high efficiency, capacity and will. Apart from the availability of material potentials for work and production, they realized that it is yet the individuals who are capable of making these potentials succeed and taking advantage of them.

Thus the conventional concern about 'Personnel Management', which has always been concerned with procedural issues in managing employees affairs, shifted into a more extended concept to include 'human resources'. This concept is concerned with the behavioral and administrative aspects involved in optimal benefiting from the capacities of humans and regulating these capacities in an appropriate organizational framework.

In recent years, some writings replaced the term 'Personnel Management' with a more accurate, comprehensive and expressive term reflecting the actual content of the concerns of contemporary management – that is, the 'Human Resources Management'.

*Dr. Eng.
Nader Riad*

In the Federation of Egyptian Industries (FEI), we realize and believe in the inevitability and the precedence of commencing the process of shaping the capabilities and skills of human capital in Egypt and the need for introducing radical changes to the process of qualifying and planning this resource. We feature our conception in this study.

First: The Importance of Human Resources

The administration of any business organization seeks to achieve certain objectives represented in producing commodities and services to be sold to consumers at reasonable prices to make profit. This way, the administration can be able to further attain needed resources to continue on working.

In order that the business organization achieves what it aims to, it first needs to get hold of qualified and capable human resources and distributes them in preplanned disciplines so that they would work according to set instructions and systems, thus producing the needed quantities and quality.

If human resources are not sufficiently qualified for the task, adverse results may be expected and the following negative phenomena in production may arise:

- Inconsistency with standard specifications
- Lower quantity
- Higher cost
- Much time
- Waste and excess use of resources

This results in a lower marketing capacity of the organization, lower revenues and a decrease in the organization's capacity for continuation. This is the importance of human resources and hence the significance of the following activities related to human resources:

- Human resources planning
- Preparation and qualification of human resources
- Training and enhancing the efficiency of human resources for a constant and regular process.
- Constant evaluation of the performance of human resources.

- Comprehensive development of human resources at the organizational level.
- Offering rewarding wages and salaries for human resources.
- Social and psychological care for human resources
- Specialized investment in human resources and making use of their successes and expertise.

The assertion on the importance of humans as a determinant in bringing about development and progress, this is based on the fact that it is the most important element of available resources. We do not intend to compare man or equalize him with other resources, such as land, capital and natural resources. We consider man the creative and renewable resource that does not run out of capacities as long as these capacities and skills are efficiently maximized. Man is the creator of transformation for all other resources. Not only this, but we regard man the most important element of investment as well. However, we do not mean to compare him to production equipments and machines, simply because this deprives humans of their humanitarian trait. The main objective is to make sure that investment in humans is not a consumer activity, but rather investment with certain revenue exceeding revenues of physical investment in the long run.

Second: Reasons behind the Increasing Interest in Human Resources Management and the Formation of Its Abilities and Skills

During the last two decades of the 20th century, the world and namely Egypt witnessed unprecedented changes and developments that led to an increasing concern about how to shape the capabilities and skills of human capital for the following reasons:

- Large size of facilities
- Development and complicatedness of means of production

- Fierce competition
- Rise in costs of work
- Change in the nature and composition of labor force
- Rise in the general cultural level in the society
- Rise at the level of expectations of employees
- Powerful influence of labor unions
- Increasing trend toward political democracy.

All this complicates problems and methods related to human resources management and the concern about shaping their capabilities and skills through increasing informative development so as to achieve the effectiveness of their performance.

Third: The Factors Affecting the Human Resources Management and the Formation of Their Abilities and Skills:

A- Internal Factors:

- Senior management philosophy in business organizations
- The regulatory status of the administration
- Professionalism of figures in charge of the administration
- Available potentials for the administration
- Available competencies for the administration
- The composition of labor force

B- External Factors:

- Legislation (regulation of work and laborers)
- The impact of the level of industrial development
- The impact of the level of technological development
- The awareness of the society of the importance of the human resources management

The influence of public awareness of the importance of management:

- The degree of public awareness of the management as a distinguished profession that needs preparation and training
- The degree of awareness of the intertwinement of managerial responsibilities
- The extent of influence of traditional governmental management on the management of business organizations
- The extent of university management education on the general conduct of university graduates
- The extent of acceptance of administrative occupations and its holders from a social perspective
- The degree of believing in the advantage of advanced planning and programming before implementation
- The degree of spread of awareness of modern methods of management and its requirements
- The degree of believing in the responsibilities of management and its social task

The influence of technological development:

- The degree of employing automation in production processes
- The degree of complication of production processes
- The control systems used in production processes
- Facility and information and its use in production processes
- The degree of using computerization in planning and follow-up operations.
- The degree of direct (or indirect) connection with the external business milieus (local or international)
- Potentials of auto-development of production operations
- The degree of reliability on external resources to acquire technological expertise for production processes
- The extent of incorporation of computer systems and information technology in the structure of managerial work
- The degree of integration and assimilation of computerization, telecommunications, electronic technologies in managerial work

The influence of Industrial development:

- The importance of intermediate and long term planning
- The importance of organizing and providing production requirements in advance
- The inevitability of steadiness of production according to preplanned schemes
- The inevitability of steadiness and stability of labor force
- The importance of coordination between the human factor and the machine
- The importance of providing convenient working circumstances for the human factor

- The effect of the mechanical and technological level on the efficiency of man and vice versa
- Developing the system of salaries and incentives in industry
- The importance of preparation, training and re-training
- The importance of the concept of total quality as a general and comprehensive concept that incorporates the facility and all its elements
- Realizing the value of research as a basis for creating competitive advantages in markets

Fourth: The Importance and Goals behind the Abilities and Skills of Business Organisation Managers:

When studying the process of shaping the skills and capabilities of human capital, one must start with studying the process of shaping the skills and potentials of business organization managers, as they determine the objectives, explore the present to determine where he stands and predict the future objectives. The management of the organization decides the needed steps to be taken to move forward with work from the present to the future. The manager is responsible for planning, preparation for work (organizing) as well as directing creative forces of people toward the objectives of the company. He plans, organizes, motivates, directs, observes, adds his farsightedness to these processes, orders, takes care of, and makes the efforts exerted by others effective. The concerns of the contemporary manager should extend further than his work location. He should be interested in suppliers, customers, shareholders and the entire society. His tasks should be positively linked to the needs, aspirations and feelings of the people with whom his company coexists.

The manager is, in fact, the most important element of developing human capital. He is the most capable of observing the actual conduct of individuals,

detecting potentials as well as problems of individuals. Thus, he is the most capable of determining the training needs.

The manager is responsible for the following:

- A- Examining the individual and assigning him a suitable task (the first correct step in the individual development process)
- B- Observing actual performance and evaluating its level and accordingly offering guidance and assistance to overcome the problems of performance
- C- Detecting the training needs of the individual (fields needing external assistance to improve performance or develop conduct)
- D- Training during work and setting an example of performance for individuals and the pattern of behavior to which they are supposed to be committed
- E- Using the system of reward and punishment to guide conduct in the sound manner

Skills and potentials of top management of business organizations must be shaped to:

- 1- Create the convenient organizational environment.
- 2- Use developed methods to examine and qualify individuals, assign them tasks, provide them with all the material and organizational potentials that allow them to work and achieve distinguished performance, and create the spirit and feelings of participation
- 3- Embrace comprehensiveness and integration in its orientations, concerns and views of different issues and problems
- 4- Adopt a growing tendency toward decentralization and democratic management
- 5- Regard the organization as a live entity that develops and interacts with the surrounding environment
- 6- Adopt the concept of leadership in its comprehensive sense through encouragement, direction, guidance, assistance, evaluation, improvement and development. Such leadership should be based on

mutual understanding with customers and employees and regarding all parties as partners in success

- 7- Believe in the importance of human relations with all working parties (employees, consumers, providers, etc) and understand their orientations and backgrounds as well as try to influence the behavioral shapers of people
- 8- Believe in collective action and its importance
- 9- Work on freeing the organization from restricting rules, regulations and procedures
- 10- Observe performance, monitor indicators, analyze phenomena, cope with variables and focus on promising fields
- 11- Believe in the importance of achieving the demands, wishes and expectations of consumers (internal and external)
- 12- Devote considerable attention to education, training and guidance as the main methods employed in shaping skills and potentials
- 13- Head for internationalization
- 14- Believe in the technological development.

Fifth: Education and Its Importance in the Formation of the Abilities and Skills of Human Capital:

Every environment has its own problems. There is almost unanimity among experts and in recommendations that the environment of the developing Egyptian society is the most one abounding with problems, obstacles and serious challenges. Thus the issue of education for such an environment is an issue of extreme significance, owing to its direct and indirect reflections on human capital, which is the original objective behind any development. The truth is that proper education is the basis for shaping the skills and capabilities of the Egyptian individual and it is the very factor that will enable him to play an influential role in achieving development.

Concern on education in Egypt grew over recent years. Also criticisms waged against the philosophy behind education, its policy, system and curricula had gravely increased. Conferences and seminars were held to discuss issues of education and its problems. The result which none disagreed on in these seminars and conferences was that education in Egypt had greatly retarded in terms of complying with the increasing needs of the contemporary Egyptian society and the value system that governs the manners of its people and preserves the peculiarity of its culture and civilization. Experts asserted that education in Egypt suffers from the predominance of quantity over quality and from flagrant incapacity to face accelerating variables as well as severe failure in preparing new generations that should be more capable of facing modern life and assimilating future sciences.

A- In this regards, the FEI believes that we are in need of reviewing education systems in Egypt. Here we will briefly manifest the results of studies conducted by the FEI in this important and vital field.

B- General View of Education:

1. Education is the base for development and prerequisite for pursuing developments. It is also the factor that governs the capability of the society to face the challenges of the age.
2. The change and development of education does not occur with an individual will, but through the nation's conviction and the contribution of all capable forces, so that it can reflect the hopes of the nation and the requirements of the age.
3. Good education is the base for liberty, democracy as well as self, environmental and social peace.
4. Education is the base for economic development. Productivity of the individual is an inevitable result of comprehensive care for individuals from childhood to adulthood, before work and during it.

5. Education is not a service but an operation that enhances powers and capabilities, which are the most valuable of all investments on which the security of the nation relies.
6. We should pay great attention to our national language. Children should think and express in a sound language. In the mean time, we should pay attention to foreign languages to enhance their abilities in knowing what is happening in the world and benefit from the progress and development in the world.
7. Extremism, addiction, passiveness and carelessness are the outcome of bad education in form and content.
8. Moving from a kind of education to another one suitable for the student's abilities should be easy to achieve the benefit needed from education, so that the student will not feel that he is banished to an inevitable type of education, which becomes his fate.
9. Paying attention to religious education and concentrating on its true essence, principles and supreme values, and putting that in the form of practical and behavioural practices.
10. Education must back the individual with experience and skill which will, in turn, provide him with an ability to get involved in the production field. He must also be able to provide job opportunities for himself and others as well. He must be able to leave a job to another and from one product line to another easily.
11. Technical education must provide opportunities for the youth to work where they learn, and to learn where they work. Working skills must be the criteria for evaluating graduates.
12. Attention should be paid to talented children and excellent youth to enhance their capabilities and protect them on the grounds that they are a human value and a national wealth.
13. University education must be expanded and developed. There has to be a distinct separation between getting a scientific certificate, which every citizen has the right to get it, and having a job, which is every the duty of every citizen.
14. Setting a system of 'full dedication' for university teaching staff. This enables lecturers to have a complete opportunity to research, invent and strengthen relations with students. This requires enabling them to fulfil their duties in a sound scientific atmosphere and giving good salaries that would

compensate for the additional jobs they do outside the university, which consume most of their effort and time.

15. Illiteracy is a dark stain in this age that we should eliminate as fast as possible. It should be faced by the efforts of honest people in Egypt with effective methods to decrease its percentage and ultimately abolish it as soon as possible.

C- Compulsion, financing and buildings:

1. The preschool stage (from 4 to 6 years) is a critical and sensitive stage in a child's life. In this stage the basic characteristics of child's personality is formed and the seeds of his future abilities are planted. It is time to integrate this stage with the compulsory stage (primary and preparatory) under the State's supervision.
2. School buildings should be reconsidered, as many of which have become harbourage places that do not fit human life let alone education life.
3. Necessary investment must be made available for education. Regardless of good faith and awareness of the importance of education, without sufficient investments the previous points will be valueless hopes, especially in light of the current deteriorating education.

D- Characteristics of the teacher's policy:

1. We have to admit that the teacher has been long neglected. Society has pretended to have given teachers what they deserved. They in turn, have pretended to have been doing their work. This mutual pretence has caused a social catastrophe. This situation has to be resolved through improving the financial state of teachers and giving them the moral incentive which restore their confidence and feeling of belonging to the most honourable profession, which job of prophets and messengers.
2. Education colleges and institutes must be developed to carry out the programs that would provide the highest level of qualifications to

teachers, through modern scientific techniques in the educational and psychological sciences, so that they will master their specialisations and acquire the ability to better teach and use modern techniques in education as well as the skills of developing curricula and school activities.

E- Curricula:

1. Education should be turned from being a quantity of information stuffing the minds of children and youth to a different concept based on their acquisition of concepts, skills and abilities that would enable them to deal with people and resources; to manage information, systems and modern technology; and to understand facts of modern life and to develop it in a manner that serves the issue of development and progress.
2. Memorising based on passive reception on the part of students should be replaced with active education where students are considered an active and efficient party to the teaching and learning process.
3. Education should not be linked to a place (the school) or a period of time. Education should be continuing. We have to support our children and youth with the ability of self education, for this is the core and basic part of the modern education process.
4. The curriculum should be flexible to prepare the student, through future studies, to move scientifically to the world of future with its available possibilities and options.
5. The concept of evaluation should be changed from just examination intimidating both students and parents to a manual for evaluating the student's abilities and skills and a reference to be used by the student in study the content and achieve targets.

F- Integrating the Adult education Curricula in Universities to Qualify Specialists in 'Adult education' :

1. The 'Adult education' movement is not separate from the movement of life, progress and change in the society, as it is an effective and interactive movement affecting the society and getting affected by it. While the progress of any society is bound to the amount of education received by its individuals, thus 'adult education' and providing opportunities to benefit from it is a precondition to the existence of such a society, its continuity and maintenance of its social and economic strength.
2. The speedy change in generations, with different characteristics of each generation in inputs and knowledge and technological trends, is different in content and pace. This makes 'adult education' programs, together with their opportunities in the field of education, qualification, training and re-training, an economic and social necessity to develop the society and increase its solidarity, and a psychological necessity to the individual to achieve his psychological equilibrium stability and readapt himself to the variables around him. This can be achieved through providing him with means of changing his social roles by changing the fields and the rhythm of life around him.
3. The human being is the maker of development and the reaper of its fruits. He is the centre of attention of any instructions. If the twentieth century is the century of knowledge and technological development, the twenty first century will be the century of reaping the fruit of this development. In other words, it will be the century that provides services of different types to human beings.

Undoubtedly adult education, with all its flexibility and comprehensiveness, will be on top of these services.

4. The diversity in modes of university education and the fall of barriers between the university and the society mandates the diverse and flexible division of the goals of the curricula for adult education, and the ability to accept change and alteration, according to the demands and offers of the society, sooner or later, in terms of changeable and diverse requirements.
5. The amazing advancement in telecommunication technology turned the world into a small village. It also connected the Egyptian people with the eastern and western worlds. This forces the goals and curricula of 'adult

education' in universities to direct a reasonable part of it toward supporting values within the Egyptian people.

6. The diversity of concepts and fields of adult education, with its ensuing diversification and multiplicity of human labor power, confirms that there is a common factor between them although they differ in their mental and professional viewpoints, as well as the goals and methods applied.

Reasons behind Integrating 'Adult education' into Universities:

1. Notwithstanding the importance of 'adult education' and the existence of some institutions that provide 'adult education' services and programs, we still lack the leadership and the specialised frameworks in the field of planning, organising and managing the programs and the projects, let alone carrying out scientific researches and studies in this field. Universities, due to their role in preparing human resources specialised in scientific research and community services, are qualified for carrying on this scientific role.
2. Egypt is suffering from a high percentage of illiteracy – regardless of its definition – which affects negatively the development process in the country. We are in a bad need of looking scientifically into this issue, as a chief field in 'adult education' in Egypt. Undoubtedly, Egyptian universities, with their scientific cadres, can contribute effectively to this field.
3. Egypt has been witnessing profound economic and social transformations, which will have a short-term effect on the development. Based on the role of 'adult education' in achieving development, and on the role of the universities in developing the society, the Egyptian universities are required to integrate the curricula of 'adult education' into its study programs to achieve sustainable development in Egypt in a scientific manner.

Targets of 'Adult education' Programs in Universities:

1. Develop the role of the Egyptian universities so as to be able to contribute and be more attached to the development experience in the community. This could be done through carrying the duties that have been long neglected unreasonably, i.e. preparing specialists to work in the field of 'adult education' and continuing education.
2. Contribute to the development of human knowledge through preparing researchers capable of qualifying and adding to 'adult education'.
3. Positive and effective contribution of universities to the 'adult education' movement in Egypt, especially in the field of illiteracy. This contribution can not be achieved unless universities have specialised cadres in this field. These cadres are prepared by advanced university programs.
4. Provide technical consultancy to different institutions in the society working in the field of 'adult education' or other related fields.

Sixth: The Importance of Training and Its Association with Education:

Effectiveness of education cannot be achieved unless it is coupled with suitable training. Here we will find the necessity and the inevitability of linking the most suitable curriculum to the most suitable training program. Hence, the changes and developments to be taken into account in the education sector should likewise be taken into account in the training sector. However, training does not only aim at increasing the application energy of the individual, but also redressing points of weakness or deficiency in the education program with the aim of strengthening this study, which enhances skills and abilities and opens the door to non-stop innovations and inventions.

Training has a great importance in forming abilities and skills of human capital through the following:

- A. Correcting, amending or developing the individual's knowledge and information about work and its modes and requirements.
- B. Correcting, amending or developing the individual's skills and abilities and the method of performing work.
- C. Correcting, amending or developing the individual's behavioural composition through dealing with his motives, tendencies, beliefs and understanding of the job and its conditions, in addition to the working community in terms of colleagues, superiors and subordinates.

Training is an important method for developing human resources. Thus, the existence of clear policies of training are considered a basic condition and an important element in the human resources development strategy in any institution.

These policies should deal with the following issues:

- Who does benefit from training, and who does choose beneficiaries?
[The issue of determining the training needs]
- How and when will the training take place? What is the content of the training process and the basis of choice and collection?
[The issue of designing the training process]
- How much is spent on training? What are the bases of identifying the budgets allocated for training? How can we calculate the income from spending on training?
[The issue of training economies]
- Who will carry out the training? What are the conditions that should be met by trainers? How should they be prepared and trained?
[The issue of training trainers]

- How can the results of the training be measured in terms of improving performance, raising productivity or modifying work conduct?

[The issue of training evaluation]

The effectiveness of the training should be guaranteed through providing and utilising mechanisms to make a link between training and the actual needs of the individual, and the conviction of the individual of the usefulness of the training.

In the field of training, the FEI also recommends the following:

- Plan training as equal to, complementing and triggering education dynamics.
- The necessity of linking guidance and training with the core of the education process to guarantee that the traditional static side would not dominate the dynamic side. This can be achieved by training.
- Continuous balanced creation of new professional groups and new specialities in the labor and utilisation market.
- Comprehensive review of industrial education, targets, plans and curricula.
- Comprehensive review of vocational training activities, its strategies, aims, plans and curricula.

Seventh: The Importance of Information in the Formation of the Abilities and Skills of the Human Capital:

We emphasize the importance of education as the governing element in developing skills and abilities of the human capital and see fundamental changes and transformations befalling its strategy, philosophy and targets to achieve increasing informational development for graduates to match their abilities and skills with the speedy technological changes. We also stress the necessity of integration between education and training, importance of training, fundamental changes and transformations in its strategy, philosophy and targets. By so doing,

this enables us to build a strong and robust base of human capital to achieve a wide leap into the future. However, we need to develop the current abilities as soon as possible, hence the importance of training and continuous training of currently working human capital.

This can only be achieved in the presence of an information network that can achieve the present goal and be a starting point for the future.

An information network on 'work information' must be established to identify clearly and accurately the data on human capital, provide information required for planning, implement, monitor and evaluate the activities related to forming the abilities and skills of human capital. The following are among the most fundamental and essential data:

- The number of facilities and their distribution (geographical, qualitative sectors)
- The number and quality of employees (males/females, technical/administrative, leadership/executive ...etc.)
- Specialisations and qualifications of employees.
- The size of facilities.
- The technical level of production (manual, semi-automatic, automatic ...etc.)
- Training capabilities available at the facility.
- Training capabilities available at the entities specialised in training (governmental, private).
- Training needs assessment.

This data is very important and a fundamental base for the activities that form the abilities and skills of human capital, and the effectiveness of the training depending on accurate data. Accordingly, planning to collect, prepare and classify this data, and set specific and unified standards, must be done under the supervision and follow-up of experts. For this purpose, we may need foreign expertise to help in setting up bases, fundamentals and standards.

Eighth: The German Experiment in Preparing Work Force to Deal with the Trends of the Age and the Market Variables:

Germany came out of its drastic defeat in the World War II (mid 1940's) completely destroyed, especially economically (after being divided into two parts). The Allies air raids prior to the end of the war destroyed the important centres steering major industries, especially in the Ruhr basin, which represented the core of the central industrial economy of the country in military and civil fields.

The gravest and most severe burden that a German government assuming authority could face in very terrible, strict, frustrating and exploding circumstances is to start work, plans and reconstruction from scratch.

In fact, the Germans had to put plans to revitalise their industrial renaissance. However the country had to start from the educational and training steps, reaching the top where there are centres and levels of high specialisation related to top management. This management would assume the responsibility of achieving success for new economic investment in all aspects of production industry (for capital goods as well as consumer goods). This required starting with utilities and advanced services in line with the new age, as there would be no repetition of the past forms as much as possible, but there would always be heading for the future.

The knotty and almost unsolvable problem that should have to be solved by planning and organisation bodies was how to take the initiative to redress the extreme deficiency gaps in the industrial professions and handicraft sector, which had negatively been affected by the improvident enlisting policy during that fierce war.

There was enormous deficiency in key engineering professions and basic handicrafts, such as carpenters, plumbers, iron smiths, turners, electricians, weavers, constructors and installation professionals...etc.

Actually, the situation required an immediate start without delay or hesitation in laying down the basic rules for institutes and necessary educational and training centres to graduate labor cadres on new bases and curricula fitting the characteristics and features of the trends and novelties revealed by the new circumstances, especially technology theoretically and practically in all aspects of life that are being computerized.

This is meant to radically change educational and training programs and to dedicate new curricula and programs to the philosophy and strategy of professional trend due to the importance of its role in correcting and supporting the specialities and skills necessary for development on the one hand, and productivity on the other. In this manner, we can achieve effective integration.

If we relatively concentrate in the deep and superficial target of all these policies, which have been governing the German industry, we will discover that the dynamic and vital goal is symbolised in the commitment to the following important considerations:

- Follow up and evaluate levels of skills (in addition to the know-how experience), which is usually acquired in higher stages.
- Provide, prepare and make available the concept of workshops that would be able to meet the requirements and targets of the advanced vocational training (especially on the bases of the know-how experiences).
- Make organic link in processes teaching, directing and training, between the mind and hand in a logical, harmonised and developed unity, according to schedule for best practice and the most effective manner in solving problems and facing difficulties.
- Link periodical tests carried out to students and trainees with innovation and creativity, not with traditional standard. This vital consideration is the sole item that would guarantee the continuity of the development of the “workshop” in the training programs on the one hand and equipment on the other. This is inevitable for a place to be a “workshop” in the contemporary German concept of vocational training culture. Another important consideration may probably be added to this and without which the educational training cycle is not completed in a renewable and developed way; that is to pay attention to teachers, vocational masters and trainers. Germany has given much attention to preparing those individuals and making specialised institutes (medium or high) available for them, in order to qualify middle managements in factories, companies and workshops.
- Acknowledge that man is the sole producer of technology. Hence, the human being is the developer of the technological application thinking, according to the requirements of his environment and mandates of his age. Technologies have become secrets for which the developed countries are vying to maintain. According to this (axiom-like) concept, the race became very fierce among countries to create the most suitable technological environment by any possible means, starting from ‘educational workshops’. That is because it is

considered the founding stage of the concept of know-how cadres and expertise. This is the reason why it was not strange to see old graduates of some academic colleges addend “workshops” (even including graduates of scientific colleges that already have labs and workshops) to receive technical and scientific training that will lead them to professions other than those they specialised in at university but by the passage of time they changed their careers and professions because of the prevailing circumstances in the labor market.

It is extremely astonishing to find among those graduates some who excel accurate arts and practices and show creativity as if they were from elite technical experts.

Achievements:

- Correct the education path
- Open new channels for some traditional specialities to reform them – through training – to acquire new skills that are badly needed on the short term
- Fill in deficiency and shortage of some rare specialities
- Widen the scope of investment lacking in such specialities and experience (after making them available through training)
- Increase the number of ‘blue collars’ who represent the idols of activity and productivity in the society at the expense of ‘white collars’ who include many disguised unemployment and low-demanded specialities.
- Encourage some big factories to adopt a new experiment – ‘factory school’ – through building schools specially for children of workers (generally for those who have finished primary education) to teach them the principles of industrial

culture in general, and the skills required for the production line of the factory in specific.

In this manner, the factory will determine the size and type of requirements in terms of workers in the 'vocational ladder' on the basic and intermediate stage. The factory will cooperate primarily with the related trade union. This experiment has proven very successful in many industries.

In conclusion, the trend of applied sciences has been prevailing in both education and training sectors in Germany to link it with a contemporary and vivid culture that reduces the static and traditional supervision. This would also dig a new channel that may adopt studies, programs, a culture and knowledge that matches the spirit of the age, its changes and requirements in order not to suffocate people in a narrow passage needing development, rehabilitation and new specialisations. However, these critical missions should be carried out by specialists and experts. The reason behind this is that education, instruction and training sectors are undoubtedly the most significant of all sectors. Only the best qualified planners and trainers should address this sector. It is not by any means a shame to seek foreign and international expertise.

Ninth: The French Experiment in Preparing Skills and Expertise and Developing Education Trends for the Future

On September 30, 1989, a council including 3000 industrialists, representatives of banking institutions and production organisers in France (this is called the National Council of French Businessmen) was held. At this council a report on 'youth and the business world in the light of the developments of the age' was discussed.

The most important thing in this important report is the fact that it basically focused on a question that was posed to the attendees: Do you think that the education system in France in its current condition would be able to prepare French youth entering the labor market every year, in a manner that would enable them to enter the world of business and production without being shunned and facing closed doors, taking into consideration that the majority of such youth represents types of rejected labor, or not urgently needed in the short and medium term?

Does this youth represent valuable yield of knowledge, experience and capabilities that would meet the actual requirements of these sectors that witnessed untraditional developments in a fierce competition and in the presence of new forms of production, management systems, transactions and automated engineering?

These developments became somehow strange to the traditional education received normally by youth in institutes and universities and in some training courses. In fact, it is difficult for traditional labor to give their employers the capacity and capabilities that can add real benefits to their business and industry in such an age of 'international challenges'.

Few voices of the attendees called for optimism about the current educational system in France, and its ability to supply the needed output in accordance with the required standards. While the vast majority of attendees (representing 75%) called for the opposite, giving analytic and statistical evidences. The majority confirmed that even the concepts of vocational training as well as its level as well as the level of trainers have deteriorated, to the extent that its output and the current labor market are worlds apart. This negative aspect has aggravated during the past three decades. The majority of attendees have stressed on the fact that they felt worried about the destiny of the French economy because of

this phenomena, as the ratio of success shown by the youth applying for available jobs shows the real magnitude of this negative phenomena. This confirms the necessity of acknowledging the mandate of developing education and training according to new bases and principles. The planning and clarification of this must be done in cooperation with trade unions, labor organisations and government bodies that are responsible for education, instruction and training sectors, such as the ministries of education, labor and social affairs, in addition to labor cultural institutes and university boards.

The attendees brought up recommendations, the most important of which are the following:

- Create systematic charts respectively that are linked with advanced interim objectives for the production samples so that such interims are permanently associated with modernity and seriousness. This will have influence on productivity quantitatively and qualitatively in light of the facts of the age.
- Enrich training experience effectively and constantly, provided that all parties involved in the training process participate in the enrichment process (including trainees by encouraging them to express their opinions, observations and objective suggestions as much as possible in return for remunerations and attractive incentives).
- Take into account the fact that the training programs should be designed to meet the target exactly to correct and avoid the negatives and defects of the education process as they arise.
- Encourage the implementation of “the competing team” principle in every productive branch separately (and under similar circumstances) to be able

to remunerate the hard workers who achieve proficiency and reduce waste rates as much as possible.

- Encourage the principle of creation, renovation and invention as much as possible. Consequently, it becomes possible for each trainee to create positive motives and in the course of time, he will be qualified to take part in developing, improving, shortening and designing at least one of the productivity parts in the way that maintains its usefulness economically, socially and psychologically when being applied. This also improves work conditions.
- Prepare the required cadres seriously without any negligence.

The human force is the most valuable thing in the country.

- Link accurately between the training instructions in general and the advancements and the recent developments in relation to the scientific theories, economic ideas, and technological applications so that the efficiency of renovation and advancement becomes later more explicit in the technological field, with more obvious results at all times when employing those who were trained this way.
- Apply reward and punishment systems fairly and objectively to ensure sufficient seriousness and complete discipline for the work atmosphere.
- Hold joint periodical meetings between those in charge of the education sector and its senior planners in the country on the one hand, and businessmen, industrialists and representatives of the trade unions on the other hand so as to discuss extremely serious and important issues, such as development of education curricula, introduction of modern equipment and utilities to the education process, and propagation of a new spirit and linking it to post-training.

- Make rewards and medals of honor for winners in the training programs and in the process of creation and design.

Discussing such vital subjects during this meeting was not a new matter; it originally goes back to a previous meeting of this board in Leon in 1970. Mutual understanding and consent took place between representatives of labor unions on the one hand and representatives of businessmen organizations and the trade unions on the other hand.

Law No. 575/71 of 1970 provided for the development of new national training policies and the establishment of a central national organization for vocational training and apprenticeship so that it remains inside it within the existing educational systems, with branches and sections spreading nationwide.

Indeed, the French experiment was characterized with encouraging a creative and renewable role in developing standard training programs and leading experiments in national important industries, such as the auto industry, planes, motorcycles, ships, agricultural mechanization equipment, durable engineering goods, electrical equipment, electronics, textile, paper, mines, packaging, in addition to the development of training programs in the business administration, secretarial institutes, offices of liberal professions, trainers, etc.

Legal provisions related to this leading experiment recommended the necessity of holding regular meetings and seminars to discuss the most serious problems and difficulties in workplace, application, new ideas and instructions about the mechanisms and economics of work, how to link these education and training programs with curricula in order to contribute to an effective role in creating the required cadres for all branches of work.

These balanced steps have had a clear effect on:

- Reducing unemployment by tangible and fruitful rates.
- Providing great opportunities for growth and development before the French business sector, along with expanding its scope of investments.
- Increasing the spirit of cooperation and trust between trade unions on the one hand and businessmen organizations on the other hand to boost productivity, which is the sole national case and the joint national target.

Tenth: Experiments of Other Countries

- The countries that have achieved higher levels of economic development were those who invested in human capital, through forming their abilities and skills and enhancing their efficiency.
- The 1991 World Bank human development report said that the increase in education for one year should increase wages by more than 10%, taking into account all other factors.
- The addition of a further year in education has led to an increase in the agricultural production by approximately 2% in Korea, and 5% in Malaysia.
- The strong link between education and the ability to acquire new information and modern technology was the real gate to economic growth.
- Commitment to education dominated manufacturing in Japan.
- The relatively strong base of human capital in Korea, in the early 1990's, was one of the factors that accelerated its industrialisation.

- One of the basic elements, and a major corner in achieving economic boom by the Asian Economic Tigers, was investment in human capital and giving extreme care to education and training.
- Experiments of the countries that achieved tangible and remarkable economic leap confirms that giving attention to human beings, developing human resources through education and training, and giving an opportunity to the human element to create and contribute, is actually the core element behind its achievement and superiority.

Summary

Development of Capabilities and Skills of Human Capital

Labor force is the basic pillar of the Egyptian national economy. Undoubtedly, organizing human resources, employing them in a sound manner and enhancing their capabilities and skills, has a great effect on maximizing the utilization of the country's national wealth and raising the living standards of people.

Estimates of the State 3rd five-year plan for economic and social development (1992/1993 – 1996/ 1997) indicated that the size of labor force in the first year of the plan 1992/1993 was 15.7 million laborers against 15.3 million laborers in base year 1991/1992 (The last year of the 2nd five-year plan), an increase of about 480,000 laborers. It is expected that the size of labor force would reach 17.7 million laborers in 1996/1997 (The last year of the 3rd five-year plan), an increase of 2.4 million laborers compared to the base year 1991/1992.

This growing size of Egyptian human capital can be national wealth that can provide great opportunities for development and growth of this business sector and maximize its investments and exports. It can also minimize unemployment rates remarkably through enhancing and qualifying human capital and its capabilities and skills with certain mechanisms to make tangible achievements in the middle and short runs. It can also help establish the foundations, bases and systems of the future that suit the developments of this era as well as the requirements and models of production and systems of administration and transactions.

Strenuous efforts have recently been exerted in Egypt to develop the capabilities and skills of human capital. However these efforts failed to keep pace with rapidly changing developments and have not yet achieved tangible results compatible with these developments.

Egypt now is more ready than ever to make an economic surge. It has many opportunities to achieve this objective. Egypt has also been able to establish stability, solve many difficult problems and face fundamental obstructive problems, such as debts and weak infrastructure. It has also started to solve the problem of education and acknowledged the fact that it is the basic issue for developing the society. Solving these problems can enable us now to think of investment in human capital, especially as foreign countries see us from another perspective because we support peace and because we are a rational balanced country in taking decisions for participation in the international arena. This definitely supports our internal efforts.

The human resources in Egypt can be trained, qualified and developed to a large extent. They are also known for being steadfast in crises, and so we must invest in these advantages.

When we discuss the issue of “shaping capabilities and skills of Egyptian human capital” we must face the reality of this issue and admit that the employed mechanisms for this purpose are not yet able to qualify Egyptian youth who join the labor market every year in a way that actually enables them to join the world of business with its structures and sectors. This is mainly because the majority of these mechanisms represent traditional and obsolete patterns and models. In fact, it is difficult for traditional labor to give their employers the capacity and capabilities that can add real benefits to their business and industry in such an age of ‘international challenges’.

We studied this issue in details in the Egyptian Federation of Industries and we briefly present the results of this study:

First: develop effective mechanisms in shaping the capabilities and skills of managers of organizations since they represent a factor that is capacity of determining objectives, dealing with the present and estimate future objectives for upcoming periods. They are the ones who will determine the steps that should be

adopted to move forward with tools and means that should be used to deal with the present and move to the future. They are the category that is most capable of employing creative capacities of individuals toward achieving goals. They work toward using the most important elements of human capital development owing to their capability of observing the actual conduct of employees and detecting increasing potentials of the individuals, thus being able to determine his training needs.

It is no secret that the main work focus of human development is the human resource. Human development aims at shaping the capabilities and skills of individuals so that they would be able to create the convenient organizational climate. Human development aims at using developed methods to enhance the level of individuals' performance and providing them with all the financial and organizational capabilities that allow them to work and perform their roles in a distinctive manner. The objective of human development also revolves around striving to develop the spirit of participation, adopt more democratic systems of management, encourage collective work, care for human relationships among all working parties, free the organization from stumbling rules, regulations and rigid procedures, and devote considerable attention to education, training and guidance as the main methods employed in shaping skills and collective capabilities.

Second: Education:

Proper education is the basis for shaping the capabilities and skills of Egyptian individuals; it is the factor that is capable of playing an influential role in creating human development.

1- The General Conception of Education:

Required education should include the following elements which represent the sufficient and necessary conditions needed to create the desired change:-

- A- Education should be regarded as the basis for development toward facing the challenges of the age, freedom, democracy, self-peace, and social peace. Education is a continuous addition to energies and human capacities.
- B- Creating a movement for changing and developing education that should be based on the nation's conviction, with the participation of all capable forces so that it would be introduced as a reflection of the hopes of the nation and a needed step to meet the requirements of this age.
- C- It should ensure easy possible shift from a certain realm of education to another. Education should equip the individual with the skills and capabilities that enable him to engage in production activities, provide a work opportunity for himself and for others, and enable him to move easily from one job to another and from one production line to another.
- D- Technical education should grant youth the chance to work in the same place where he learns and learns where he works. Proficiency of work should be the main criteria of evaluating graduates.
- E- Talented and brilliant children and youth should be looked after and their distinguished capacities should be developed.
- F- University education should be expanded and enhanced. University staff should be devoted completely to their work, so as to provide them with the full opportunity for research and creativity financially compensate them for leaving other jobs outside the university.

G- We must care for proper religious education so as to implant values and principles, the Arabic language as a native language, and foreign languages as a means to develop knowledge and effective benefit from the world developments.

2- Commitment, Funding and Buildings

A- The Kindergarten stage (4-6 years) is a critical and significant stage in the lifetime of the child. In it the main traits of the child's character are shaped and the seeds of his future capabilities are planted. This is why such a stage should be included within the compulsory education stage (primary and preparatory).

B- School buildings that are unfit for human, let alone educational, life is an issue that needs reviewing.

C- Necessary investments for education should be provided.

3- Teachers:-

A- Their financial and moral statuses should be improved to restore their confidence and their feeling that they occupy the noblest profession, the task of prophets and messengers.

B- Faculties and institutes of teachers should be developed through implementing programs to offer the finest qualification of teachers.

4- Curricula

A- Diverting from quantity to quality basis so as to make students acquire concepts, capabilities, skills of dealing with humans and resources, information management, systems, modern technology, assimilation of facts about contemporary life and means of developing it to serve the issue of development and advancement.

- B- Shifting from memorization and dictation based on negative obtainment of information to positive education.
- C- Enabling students to acquire the skill of self-education.
- D- Changing the concepts, methods and mechanisms of assessment so that the evaluation process would achieve its correct objectives and detect genuine capacities and skills.

5- Incorporation of Adult education Curricula into Universities:

- A- Illiteracy is a shameful stain in the nation; its percentage is quite high in Egypt. Adult education should not be detached from the progress of life, development and changing society. Thus, eliminating illiteracy and qualifying and training adults is an economic and social necessity for the development of the society and a psychological necessity for the individual to achieve his psychological balance and stability.
- B- Egyptian universities should be developed so as to be more contributing and more linked to the development experiment of the society through qualifying specialists to work in the field of adult education.
- C- We must contribute to developing human knowledge through preparation of researchers capable of qualifying and adding to the adults' information. Also technical consultations should be provided to different civil society institutions operating in the field of adult education or in related fields.

Third: Training:

The desired effectiveness of the education process can only be achieved when it is associated with relevant training. The relevant educational curricula should come along with a suitable training program. The objective of training is not to increase practical burdens on the individual, but rather to redress any shortage of the educational program. The aim is to strengthen education with more aspects that could raise and deepen the level of capabilities and skills and open the door for invention and creativity in a continuous manner. Training also rectifies, modifies and develop the total behavioral structure of the individual and an important method for the development of human resources.

Thus it is important to set bases for clear and specific objectives of training that can tackle all issues and answer the following questions:

1. Who does benefit from training, and who does choose beneficiaries?

[The issue of determining the training needs]

2. How and when will the training take place? What is the content of the training process and the basis of choice and collection?

[The issue of designing the training process]

3. How much is spent on training? What are the bases of identifying the budgets allocated for training? How can we calculate the income from spending on training?

[The issue of training economies]

4. Who will carry out the training? What are the conditions that should be met by trainers? How should they be prepared and trained?

[The issue of training trainers]

These policies and objectives should be adopted on a national as well as institutional scale.

Analysts emphasize the necessity of overseeing the following points in particular:

- A- Ensuring and asserting the effectiveness of training through providing and using mechanisms for making linkage between training and actual needs of individuals and individual's conviction of training.
- B- Planning for training and taking into account that it is a complementary element to education as well as a driver of its dynamism.
- C- The necessity to solidly link guidance and training to the core of the educational process to ensure that the conventional static aspect would not dominate the dynamic aspect through training.
- D- Constant and balanced creation of new professional groups and new disciplines in the employment and recruitment market.
- E- Reviewing industrial education in a comprehensive manner, including its strategies, objectives, plans and curricula.
- F- Reviewing vocational education in a comprehensive, including its strategies, objectives, plans and curricula.
- G- Opening new channels for traditional disciplines to reshape their capabilities and skills through efficient training that to acquire new demanded skills
- H- Increasing the number of 'blue collars' who represent activity and productivity in the society at the expense of 'white collars', among which the symptom of disguised unemployment and low-demanded disciplines are widespread.
- I- Encouraging big factories to adopt the experiment of "factory school".

- J- Developing regulatory maps for production patterns that are linked with developed provisional objectives in order that this stage will be constantly characterized with modernity and seriousness, thus reflecting positively on productivity in terms of quantity and quality.
- K- Efficient and constant enrichment of aggregate professional expertise in which training is carried out, on condition that this process should be conducted in participation with all parties of the training process (including those who receive training programs). This can be done through encouraging them to give their opinions, notes and objective suggestions when possible in return for enticing incentives and rewards).
- L- Encouraging the implementation of “the competing team” principle in every productive branch separately (and under similar circumstances) to be able to remunerate the hard workers who achieve proficiency and reduce waste rates as much as possible.
- M- Encouraging the principle of creation, renovation and invention as much as possible. Consequently, it becomes possible for each trainee to create positive motives and in the course of time, he will be qualified to take part in developing, improving, shortening and designing at least one of the productivity parts in the way that maintains its usefulness economically, socially and psychologically when being applied. This also improves work conditions.
- N- Linking accurately between the training instructions in general and the advancements and the recent developments in relation to the scientific theories, economic ideas, and technological applications so that the efficiency of renovation and advancement becomes later more explicit in the technological field, with more obvious results at all times.

O- Holding joint periodical meetings between those in charge of the education sector and its senior planners in the country on the one hand, and businessmen, industrialists and representatives of the trade unions on the other hand so as to discuss extremely serious and important issues, such as development of education curricula, introduction of modern equipment and utilities to the education process, and propagation of a new spirit and linking it to post-training.

P- Applying systems for distributing prizes and medals to trainees who win in training programs and the process of invention and design.

Fourth: Information

A network of information about “work information” should be set up to clearly determine the accuracy of the data and information needed for planning, implementing, observing and evaluating the activities of shaping the capabilities and skills of human capital.

May God grant us success

Dr. Eng. Nader Riad