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ASPECTS OF THE CAPACITIES OF THE WORKERS IN THE MEXICAN SME'S BEFORE THE TECHNOLOGICAL INNOVATION

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ABSTRACT
The great changes that affect society have assumed also a high degree of transformation in industry, particularly, in the field of production, bringing as a consequence, the evolution of forms of work that demand a constant readjustment of the people, it is evident that the formation or preparation for such work must have a manner completely different to the one which is presently offered. A flexible technical formation is indispensable which allows the individual to find labour performance, successive possibilities of adaptation to an always-changing reality.

Keywords: Technological innovation, Education, SME's, Design

1 INTRODUCTION

The true value of a business is measured by the profitability over a period, hence, the organizations must not be limited in efforts to try to survive; the requirement goes much more beyond of that, it is intended to reach greater levels of productivity through new forms of flexible specialization and to be to equal in the establishment of commercial solid networks, it comes out from the analysis of Porter [1], when it indicates that the action of the corporative objectives continue being the same, it does not mean that the it would be the methods to obtain it

This can not only be instigated from the enterprise sector, but requires a policy possibly from regional or local authorities that helps toward the development of technological borders, oriented in the search of radical innovation. As well as policies of integral character that can allow to the greater number of companies of a certain territory to align itself to a goal, facilitating all regions to run at the same speed or at least in a less deficient way.

For the above, consideration must be given to the organization of the labour market which influences the base of the knowledge and of learning within the company, basically in three ways [2]:

1. It determines at which point the knowledge is generated inside or outside the company which demands of the country a formal education system, that accord with the organizationally necessities,
2. It determines the mobility of the workers, and the capacity of the company to acquire and to accumulate the different types from knowledge, and
3. It forms the professional trajectory of the individuals, establishing the limits of the learning.

The variety of models of learning and innovation can allow or prevent the regions or the countries developing organization forms that generate the types of innovation associated to the different technologies [3]; perhaps the inserted knowledge, difficult to create and to transmit without social interaction and labour mobility, constitutes the most important source of learning and sustainable competitive advantage in an economy more and more global; that is based on the knowledge.

To support the development and to impel its knowledge it means adapting the technology to the required conditions, to favour the labour market and to avoid issues that affect negatively the small companies that find greater obstacles in the development of innovation. Also the access to finance for the development of innovation, as well as the deficiency in many of them of organizational capacity, together with the lack of adequate qualified personnel. The seriousness of this matter is worse in the fact that small companies achieve the greater growth in employment.

2 CHARACTERISTIC OF THE EMPLOYER

Due to arise of greater competition in the present market, the demand for manual labour in general and particularly of technicians and professionals is increasing although it is necessary to consider that the new labour demands usually have different compositions from previously.

The different demands causes a breach between that which is offered and that which is demanded. Often few postulants respond to the profile requested by the companies; for this reason, a more and more clear characteristic of demand is in the selectivity, which involves a great effort of adaptation on the part of the technicians and professionals.

Productive organizations look for young personnel with personality and agility to integrate themselves in extremely dynamic and competitive contexts and be able in a short term to lead or to participate in new projects. The technician who is preferred, is one that can demonstrate some previous experience, that stands out to the companies. In synthesis, the search of prospectives profiles takes place, that is to say, people who can lead or collaborate effectively in the growth of projects and/or that contribute to create the optimal conditions. Certain predominant values have to do with the productivity, efficiency and development of the business [4].

These are the characteristics that the companies look for in its personnel [5].

1. Versatility; the ability to act in different contexts and sectors with high degree of efficiency.
2. Efficiency; the capacity to handle the business or project with small structures where the emphasis is placed on planning, budgets, costs and control.
3. Strategy; the ability to generate/participate in organizational situations within a process of permanent change and transformation.
4. Update; autonomy for handling modern technologies, among others those of management (communications and information systems).
5. Leadership; better handling of human resources and ability to lead work parties, generating a commitment of all to the structure with responsibility to achieving pre-selected targets.
6. Stabilities; preparing for different situations, and handling the uncertainties and the changing methods in more and more complex contexts, all of them without deflecting from the desired objectives.

Based on the new contexts it can also be indicated that there will exist a noticeable deficit of formation and qualification in the traditional education units of half level and post secondary level in the country

The reasons for this situation is that neither the educational institutions nor the companies are prepared to face the changes, as well as to face the ways in which these changes are being considering.

It will be necessary to carry out systematic planning that can contribute to the technicians the ability to act in these new contexts and to advance more and to define/deepen the joint processes between the educational institutions and the companies. This will be needed to overcome the present situation and to form the technicians within the frame of conceptual schemes to be adapted to the new contexts or future situations [6].

The permanent contact by the educational institutions with the labour world and the community is based also on the belief that the incorporation of technology plays a central role in the economic-social development of the countries. This leads to the improvement in the levels of the quality of life of the population. Based on these previous ideas, it would seem it is necessary to continuously adjust the education system to the requirements of the productive apparatus but without forgetting "the integral" formation of the individual. However, also increased must be the supply of greater specialization along with a greater diversification of the knowledge.

3 THE NEW TECHNOLOGIES, EDUCATION AND ENTERPRISE

A scope of impacts on the education system occurs whereever the individuals work is located. In general, the process of division of the work gives the key of that location.

In this sense, one of the most significant demands of this process is accentuated in countries that are experiencing modernization and important technological changes are related to the incorporation of modern technology in the productive processes [7].

The learning of specific competitions whose scientific and technological foundations are not specified is a simple training, and that training does not form a real learning. The workers and the technicians, who only are trained, lose their professional qualification quickly and they are generally unable to follow the processes of change operated in the productive structure, which generates misalignments in the social and economical personal order.

The gaining of the technological know-how is the central element of suitable technical knowledge. In addition, the technological know-how is fundamental so that the technician - in general all worker - can understand the progresses that take place in knowledge related to their profession. A great part of the Mexican Pymes manufacturing is in process to incorporate new technologies by means of the "technological innovation", as well as through the technological transfer, hence becoming receivers or creators of new technologies.

In this sense, the technological innovation can be considered as "the sprouting of a new product or service, a new machine, a new process or form of organization, a new consumer or power plant, a better quality of life or the facilities". Also technological innovation can be referred to "a new combination of the factors of production to produce a benefit or a service, although those same factors may not be modified" [8].

4 THE COMPOSITION OF THE WORK FORCE

In social investigation, it is identified and reaffirmed that the formation of human resources and the generation of technology need an explicit and continuous policy from the public sector, in as much as the mechanisms of a market economy do not assure that optimal changes are occurring in the field of the education and the development of the technological infrastructure.

On the other hand, it will be necessary to consider that in order to get products in world-wide markets, industry will have to define the "economies of scale", as well as of a permanent change and technological improvement and of organizational innovation [9].

A serious symptom of the modernness transformation that introduces technology is the qualification and location of suitable people and the opportunities of a career that depends a great deal on the technical specializations that are needed in the different productive sectors. This situation will not only stay in the future but possibly, it will increase in importance.

The technologies can be developed for the companies by the institutions of technical education depending on the variations in qualifications, jobs and occupations.

Other routes of contact with the productive world, in order to penetrate itself with the technological-economic reality are related with:

1. The actions of technical collaboration with the companies, as mechanisms that help the feedback of the system;
2. The committees, commissions or communications groups between the education institutions and the enterprise and labour sectors that allow information to arrive with fluidity, opportunity and precision;
3. The deep discussions with industrialists, technologists and supervisors of the companies at the sector level, or in establishments, to advance a better knowledge of the reality;
4. Contact between institutions of technical education as well as with institutions of the public sector, with universities and technological-scientific research centres.

4.1 Technical Education in Mexico

Many principles, ideas, theories, tendencies and possibilities to introduce innovations in technical education in Mexico are being delayed due to certain inflexibility of the scholastic educational systems, of the administrative bureaucracy of the education management and by the resistance to change traditional thought of a good number of the educators and authorities.

Consequently it can be pointed out that the education in relation to the new technologies is at a crossroad for it only continues to educate the young in technologies that will leave them virtually un-employed, or to the sub-occupation or under employment. The people will leaves the education system with curricular objectives, methodologies and contents different from those needed to overcome the obstacles that they will find in the labour market. On the other hand, no education system is able to give all the knowledge needed on a subject and the students would not be able to learn everything, which has been discovered in scientific investigative and technological action. Certainly, they will have to learn to look for, to inquire, to reflect and to use their mental and creative potentialities.

Therefore, the educational process to accumulate knowledge must be replaced by one to look for and to analyze critically information to produce new situations, products or processes and to apply it to the surroundings. This needs to develop life-long learning skills that can access to information, to the analysis and interact with the information in an economical and social surrounding. There is a need for innovating learning, based on the anticipation, integration and the self-taught. In addition, if curiosity in the logical and analytical processes is stimulated, potentials for the participation, reflection, criticism and innovation will be developed.

CONCLUSIONS

Always the development of scientific and technological knowledge is becoming more necessary, and the quality of scientific and technological education becomes more important in the development of new competitive advantage. The search for better employment is only possible in the greater quality and widening of the productive base, with an increased development of products based on new knowledge and technological innovation. With technological innovation it would seem that more and more people will require a less deep specialist education in a type of occupation. For them, a general education is more suitable that will follow the changes in technological development and would allow a better adjustment to those changes and would facilitate its place in the productive process of constant evolution. For that reason it will be necessary to have more availability of programs that offer fast technical education and, specially, courses with the capacity to update regularly. To develop a education system based on innovation means to debate the educational processes that are available nowadays, specially for professionals. Course contents and teaching and learning methods must be renewed, centring them on the "know-doing" and the "know-being",

Organizations that are capable of adopting and to dominating the accelerated changes to which they will face can achieve success. This is valid especially for small companies that in the today's world must be prepared to adopt change.

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