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Means of Developing Communication Between the Engineering Colleges and the Labor Market

Abstract- *The research aims at identifying the means of developing communication between the engineering colleges and the labor market by studying the many scientific sources, the previous studies and the working papers of a number of conferences, seminars, and workshops related to the research topic. Strengthened the relationship between engineering colleges and the labor market. The research adopted a descriptive method. The current research confirmed the adoption of the modern model of the advanced countries of the world in enhancing communication between the engineering colleges and the labor market, which is based on the integrated vision based on partnership. The research came out with a number of recommendations and suggestions.*

Keywords- *Engineering Colleges, Labor Market.*

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1. Research Problem

There are a number of domestic and external challenges facing the educational process in our dear country Iraq. These challenges are characterized by a low level of alignment with the needs of development and the labor market, demographic changes, the growing social demand for higher education, poor funding, the qualitative level of curricula and quality of programs. There are also many other challenges that lie in the weakness of keeping pace with the developments of information and communication technology, knowledge explosion and economic challenges. Therefore, the weakness of communication between universities, including engineering colleges and the field of work are among the most prominent problems facing Iraq.

The results of research and scientific studies indicate that there are a number of main reasons behind these challenges. The most prominent of these reasons is the lack of relevance of the outputs of universities and the need of the field of work, as a result of the nature of the curricula and the lack of most graduates to many of the skills and abilities that enable them to adapt to the changing needs imposed by the requirements The field of work in Iraq as a result of Iraq's past political instability in the previous era. These studies also indicate that the phenomenon of

semi-complete schizophrenia between the universities of higher education and the labor field has led to an increase in the number of unemployed graduates of these universities as a result of their non-acceptance of employment by private sector companies because of their lack of abilities and competencies towards the requirements of the field of work. [. Thus, there are armies of graduates who are unemployed despite having different competencies.

The Ministry of Higher Education and Scientific Research has realized the seriousness of this problem and its implications for the economic and social development in Iraq. As a result, the National Development Plan [4] and the National Strategy for Education [5] have adopted a scientific approach to solve this problem, Requirements of the reality of work, in addition to guidance on the development and modernization of curricula. Hence, the problem of research is that there is an urgent need to strengthen communication between universities and the labor market. The present research will attempt to answer the following question: What are the means of developing communication between engineering colleges and the labor marke.

2. Research Importance

Recognizing the means of developing and strengthening communication between the engineering colleges and the labor market is important to the advancement and upgrading of engineering education outputs. It also helps the Iraqi universities, especially the engineering faculties, to develop solutions and appropriate programs to overcome and confront all the challenges that stand in the way of this. The necessary communication through which effective partnership between the faculties of engineering and the labor market is achieved. Today, engineering colleges need to keep abreast of the global trend, by upgrading modern teaching methods enhanced by educational means, as well as allowing scientific research to participate actively in economic and social development. The importance of the present research lies in determining the means of communication between the engineering colleges and the labor market, through which positive results are achieved by both parties, which contribute to the advancement and social and economic progress in Iraq

I. Research Objective

The aim of the research is to identify the means of developing communication between the engineering colleges and the labor market. The theoretical descriptive approach was adopted in the study of these methods.

II. Limitations of research

The current research is limited to reviewing the means of developing communication between the engineering colleges and the labor market, which contribute to the improvement and development of the outputs of engineering education, in addition to presenting one of the global experiences that strengthened this communication.

3. Research Terminology

1) College of Engineering: It can be defined as an organized scientific educational institution, which prepares the individual professionally, in addition to carrying out scientific researches that serve the comprehensive development plans. It seeks to provide a learning and research environment that is conducive to education and creativity, which contributes to preparing highly qualified graduates and achieving national and international scientific twinning. And strengthen partnership with other sectors of society and institutions in relevant areas.

2) The labor market: It is the place where the various factors that provide the elements of employment interact, ie, the place where employers look for workers, in which workers search for a job opportunity, [6] and is defined as the economic regulatory institution in which the supply of labor and demand Where it is determined the job opportunity required and estimate the size of unemployment, in addition to the determination of wages[7].

3) Means to develop communication: defined as a set of practices, support, posts and concerns that work to develop and strengthen communication between engineering colleges and the labor market.

4. Theoretical framework

I. The nature of communication between the faculties of engineering and the labor market

Communication between the faculties of engineering and the labor market is based on the relationship between the two parties on the basis of mutual cooperation in all fields that benefit them. The objective of the universities is financial and material support in order to improve their performance and improve their outputs. In turn, this will lead to the development and improvement of the performance of the private sector.

The importance of this communication is highlighted by the need of engineering colleges to develop their resources and achieve their projects and research in light of the economic crises at the present time.

The difference between the universities and the labor market is in the goals of each party. The Fission (1991) pointed out that the universities aim to achieve new discoveries and knowledge and develop the best ways to enhance the financial side to support scientific research to serve the community while the field of work (private sector) To invest the best of modern and new methods in order to create value added to its products and services provided to individuals [8].

In spite of this difference in objectives between the two parties, it is necessary to develop communication between them because it will provide the appropriate conditions for economic and technical development. Therefore, the engineering colleges can open up to the society to achieve its requirements and provide services to the private sector, thus enhancing national production based on Iraqi engineering.

II. Forms of communication between universities and the labor market

This communication takes simple forms of a long-term product [9]:

- 1) Strengthening student projects and supporting them financially.
- 2) Participation in the membership of university councils by businessmen.
- 3) Supporting business organizations to the activities of the university, scientific, students and community.
- 4) Mutual scientific visits are often normal.
- 5) Sponsoring conferences and workshops, and participating in exhibitions and industrial and commercial markets.
- 6) Material contribution to scientific publications and publications.

III. Obstacles between universities and the labor market

a. From the point of view of university workers:

- 1) Adopting the private sector on foreign knowledge and techniques instead of local.
- 2) The private sector solves its problems by relying on its experts and technicians.
- 3) The lack of interest of universities in educating the community about their services to the community and the private sector.
- 4) The weakness of the private sector's confidence in university experience and its outputs and therefore resort to foreign expertise.
- 5) Weak private sector support for scientific research.
- 6) Negative impressions of the private sector interest universities scientific research.
- 7) The poor interest of the private sector in patents and scientific innovations that can be utilized.
- 8) The private sector's failure to provide researchers with the required information because they regard it as a private secret.
- 9) Lack of interest of some private sector companies to develop plans and programs for research and development.

b. From the perspective of workers in the labor market:

- 1) Lack of interest in applied research universities that deal with labor market problems.
- 2) Most university research aims to help researchers in scientific advancement away from the need of society.
- 3) Universities interest in the theoretical aspect at the expense of the practical side.
- 4) Not linking universities within their strategic plans between their specialties and the needs of the labor market.
- 5) Universities wait for labor market initiatives to communicate and work together rather than vice versa.

6) The rapid development of the labor market and the problems resulting from it exceed the level of university contribution.

7) The weak link between university curricula and the need of the market because it focuses on the theoretical side without application.

8) Universities lack laboratories to convert research results into a marketable primary product before commercial production.

9) Overstating the costs of partnership programs by university researchers, and not risking the labor market by financing unsecured programs.

10) The desire of the private sector to import ready-made technology from abroad as its content.

11) Some sectors of the labor market are less interested in innovation, development and technology domestication.

12) Weak knowledge of the potential of universities to develop labor market outcomes and solve problems [9] [10] [11].

IV One of the successful and effective experiences in communication between universities and the labor market:

a. The Japanese Experience: The reason for the success of the Japanese experience in the social partnership between the industrial, governmental and university sectors is due to the need of the Japanese industrial sector to innovate and research and development of its presence in the high technology sectors, the high level and the good research environment of the Japanese universities, in addition to the coordinators of cooperation with other sectors in Universities. This was confirmed by Essam Bukhari in a paper entitled "A study of the factors of success and challenges in the Japanese experience in the social partnership between the industrial, governmental and university sectors", by expanding the role of universities from institutions that disseminate knowledge and develop human resources to include new aspects that contribute to enhancing the economy and national technical capacity through partnership With other sectors of society [13].

b. Photos of the partnership in the Japanese experience: The partnership takes shape in several successive and gradual images [14]

1) Joint Research System: This system was introduced in Japan in 1983, in which private researchers are sent to universities, and university professors are sent to the private sector in a parallel and equal framework to serve the interests of both parties. Through the implementation of joint research, the results of the Joint Research Agreement, the payment of

joint research costs and fees, the sending of private sector staff to universities, the sending of university professors to the private sector.

2) Research according to request or commissioning: refers to special agreements between universities and the private sector according to the request or wishes of the latter. The mechanism of applying research on request or commissioning between the parties is through (applying research on request, results of research agreement on request, payment of research costs and fees, research results report).

3) Grants and grants (chairs of scientific research) refers to the financial contributions made by private sector companies to universities in order to promote scientific research or improve educational activities. These donations are known as Endowed Chairs, Special sections or research activities, to be established by specific contributions or grants from certain parties. The mechanism of applying the joint research between the two parties is through (a presentation of the financial donation, payment of the donation, determine the scope of the donation).

4) Favorable tax treatment: It aims at promoting and strengthening partnership between the private sector and universities and is applied to private enterprises that have an increase in the costs of research and experiments that take a number of years. As well as a system of exemption from research taxes and special joint experiments: It is applied to private projects to promote research on demand between universities and the private sector. In addition to the exemption on financial contributions: It applies to companies that include total contributions or financial contributions in their losses.

c. Achievements of the partnership between universities and the private sector in Japan:

This partnership has achieved remarkable successes exceeding expectations. The value of research requested by private sector institutions from Japanese universities has increased to reach more than \$ 10 billion by the end of 2010. The number of cooperative research centers between the two sides has also increased (23) centers in the early nineties to reach 100 centers in 2010.

5. Conclusion

We conclude from the information presented that there is a problem and obstacles in promoting communication between the universities, including the faculties of engineering and the labor market, and today we need to strengthen and develop this communication. The faculties of engineering should keep pace with the global trend by paying attention to their curricula and

modernizing them. The methods and methods of modern engineering education enhanced by different educational means and away from the traditional engineering education, in order to improve the output of engineering education, in addition to allowing the applied scientific research to participate actively in economic and social development.

Activating the role of the private sector in developing appropriate solutions and programs to overcome and confront all the challenges that stand in the way of this necessary communication through which the effective partnership between the labor market and the engineering colleges will be realized, despite some differences in the objectives between them. Communication between the two parties, through which achieve positive results of the parties, which contribute to the advancement and social and economic progress in Iraq.

There are global experiences in enhancing communication between the faculties of engineering and the labor market, which can be utilized by working according to their modern and advanced programs. Engineering colleges should move to the modern model of the advanced countries of the world in enhancing their communication with the labor market. Partnership rather than cooperation and mutual interests, as part of joint research and projects. And to make maximum use of the human and material resources available in the faculties to enhance the aspects of creativity and innovation in the labor market

6. Recommendations

a) Means of developing the role of engineering colleges to enhance communication in the labor market:

- 1) Strengthen the bonds of trust and active partnership with the labor market in economic and social development.
- 2) Initiate workshops to develop the labor market.
- 3) Interest in scientific research and its linkage with the requirements of the community and the labor market.
- 4) Preparing comprehensive field studies for actual and future labor market needs.
- 5) Holding a periodic research conference on the variables of the labor market and how to keep pace with educational outputs.
- 6) Linking the faculties of engineering within their strategic plans between their specialization and the needs of the labor market.
- 7) The development of scientific disciplines, increasing the need of the future society.

- 8) Review and update the curriculum in the light of the results of scientific field research, which focused on studying the variables of the labor market
- 9) .Include in the curriculum the recent trends in the expected field of work of the graduate of the Faculty of Engineering.
- 10) Interest in the practical application of the theoretical vocabulary of the disciplines needed by the labor market.
- 11) Adopting competency-based education in teaching and training.
- 12) Increase the number of hours of practical training at the expense of the number of theoretical hours.
- 13) Link the subjects of graduation projects of students to the needs of the labor market, and overcome the difficulties in that, while giving the student an opportunity to take responsibility in the research before the employer.
- 14) Provide a coefficient for converting the research results into a preliminary product that can be marketed before the production stage Commercial.
- 15) Focus on the basic skills required by the labor market such as foreign language and techniques the computer.
- 16) .Engineering colleges should use labor market experts to teach some specialized vocabulary And training.
- 17) Utilizing global experiences in the development of effective training systems and effective professional guidance, meet Labor market variables.
- 18) Continuous attention and care in the continuing education and training centers of the faculties of engineering.
- 19) Training and continuous rehabilitation of teaching staff and technical, through training programs a partnership between Engineering colleges in Iraqi universities as well as non-Iraqi universities to adapt and requirements Labor market.
- 20) Setting standards and specifications for the graduate of the Faculty of Engineering at its levels (cognitive, emotional, technical), So that all scientific engineering departments adhere to it.
- 21) Holding seminars and workshops to inform students of the College of Engineering of the objectives of the College and linking them with institution Labor market.
- 22) Taking care of the outputs of engineering colleges and their support, because engineering education is directed towards the role Important in the process of reconstruction and development and meet the demands of the labor market.
- 23) Activate the work of the people of rehabilitation and employment and follow-up students and graduates to achieve the goals in Adapting the outputs of engineering education and labor market requirements.
- 24) Preparing more field research to study the problems of graduates and the level of their competencies and skills ‘ And employers' satisfaction with their performance.
- 25) Holding a forum for all graduates, especially workers in the labor market, to know the strengths and weaknesses In the field of preparing educational outputs.
- 26) Paying attention to community awareness of the services of the faculties of engineering for the community and the private sector.
 - b) Means of developing the role of the labor market to enhance communication in engineering faculties:
 - 1) Taking social responsibility to attract graduates, and work to raise their efficiency through work.
 - 2) The initiative to provide the faculties of engineering with the requirements of the specialties, consultations and scientific research.
 - 3) Contribute materially and morally to the research of professors of the faculties of applied engineering.
 - 4) Support the laboratories and technical university workshops with equipment and supplies to improve their performance.
 - 5) Promote creative students, support graduation projects for engineering students and all scientific disciplines.
 - 6) Active and serious participation in workshops and scientific conferences held by the faculties of engineering.
 - 7) Facilitate the possibility of summer training for students of the faculties of engineering within its sectors.
 - 8) Provide employment grades for graduates of engineering colleges or finance their small projects.
 - 9) Developing the capacity of the students of the faculties of engineering in the specializations of the private sector within the programs of the Rehabilitation and Employment Division.

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