

human being is the most required capital. This capital can be provided by higher education institutions and scientific, knowledgeable and economical research.

”اثر اقتصاد المعرفة على التعليم العالي والبحث العلمي“

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ملخص البحث:

هذا البحث هو محاولة لتوضيح ومناقشة اثر الاقتصاد القائم على المعرفة (المشار إليه فيما KBC) على التعليم العالي والبحث العلمي. فإنه يلقي الضوء على الاقتصاد المعرفي كمفهوم وعملية لتعزيز وتعميق هذا المصطلح حديثا والتي من شأنها أن تسهم في تحقيق اقتصاد تنافسي قائم على المعرفة التي تقودها المؤسسات التعليمية المؤهلة ابتداء من رياض الأطفال وانتهاء بالجامعات. بدا واحدا من المفاهيم الجديدة الرئيسية كما أن هناك تصورا متزايدا لأهمية خلق المعرفة وتوزيعها لتحقيق الازدهار الاقتصادي والدور الذي يمكن أن تضطلع به الجامعات في هذا الصدد وتمشيا مع النمو السريع في تكنولوجيا المعلومات والاتصالات، في النصف الثاني من هذا القرن هو الاقتصاد القائم على المعرفة. اقتصاد المعرفة هو المصطلح الذي يشير إما إلى اقتصاد المعرفة التي تركز على إنتاج وإدارة المعرفة في إطار من القيود الاقتصادية، أو إلى اقتصاد قائم على المعرفة. و المعنى الثاني، أكثر استخداما، فإنه يشير إلى استخدام تكنولوجيات المعرفة (مثل هندسة المعرفة وإدارة المعرفة) لإنتاج منافع اقتصادية، فضلا عن خلق فرص العمل.

لا تزال تهيمن سياسات العلم والتكنولوجيا من الحجج التقليدية فشل السوق حول الحاجة إلى الدعم الحكومي للبحوث الأساسية. العراق هو واحد من البلدان النامية التي لم تتحول حتى الآن على نحو فعال الى الاقتصاد القائم على المعرفة. وسوف تقع وراء

Although the terms "Knowledge economy" and "Knowledge-based economy" look similar and strongly interrelated, but there is

Drucker.(Drucker, ١٩٦٩)

Discontinuity and Fritiz Machlup as stated by developed and elaborated by Peter Drucker in his book The Age of term was first used by the economist Frederick Winslow Taylor then (management) to create economic benefits and job opportunities. The technologies (such as knowledge engineering and knowledge which is more widely used to refer to the use of knowledge constraints. It may also refer to the knowledge based-economy management of knowledge within the economic conditions and economy of knowledge that focuses on the production and The knowledge economy is a term that refers to an

١,٢ The Notion of the Knowledge –Based Economy:

within the domain of higher education and scientific research. clear that all these areas fall

in the global map of knowledge –based economies. It is definitely (R and D), infrastructure and financing to position itself prominently (HRD), science and technology (S and T), research and development and highly improved: the area of human resource development knowledge-based economy, the following areas should be developed knowledge community, which could be later transferred towards technically and scientifically skilled workforce. In order to be research as it is the one which provide the community with surrendered to the ministry of higher education and scientific is to be submitted to an institution or an organization, it should be transfer from a consuming society to a productive one. If leadership progress and welfare of people. It will complement and activate the way towards a rapid rate of economic growth and sustain the The knowledge-based Economy if adopted properly will pave the

١,١ Introduction:

مقدمة المعرفة الاقتصادية.

العلمي العالمي والتعليم العالي من قبل مؤسسات التعليم العالي والباحثين العالميين. ويمكن توفير رأس المال هذا من قبل مؤسسات التعليم العالي والتعليم العالي.

based economy.(Stoneman, 1990) and scientific inventors are basic and essential to get a knowledge of making more productive use of inputs and which require continual innovation. Therefore the technical careers including computer scientists, engineers, chemists, biologists, mathematicians Today economy is more dynamic and rests on the principle educational institutes.)

community(i.e. Research and development factors, universities, labs, new products and process that develop from the research innovations and the globally competitive need for innovation with KBE stage which is characterized by the upheavals in technological economy. The development in global economic restructuring led to production economy to knowledge economy to post-industrial/mass agricultural economy to industrial economy to post-industrial/mass economy to note that the developed world has transitioned from an It is not hidden to any researcher in the history of the global

١,٣ The Emergence of KBE:

It is worthy to mention that the world Bank declares four essential bases in their knowledge Assessment Methodology that a country transforming towards knowledge based economy, after being knowledge society, should have. These basic requirements include: sound institutional and economic regime, education system, telecommunications, infrastructure and an innovative system.

emphasis as other economic resources.(Abramowitz, 1989) It is worthy to mention that the world Bank declares four essential bases in their knowledge Assessment Methodology that a country transforming towards knowledge based economy, after being knowledge society, should have. These basic requirements include: sound institutional and economic regime, education system, telecommunications, infrastructure and an innovative system. knowledge resources such as know-how and expertise have equal and practices that determine success in the industrial economy where "information society". Such transition requires rewriting the rules transition to a "knowledge economy" which is an extension of an observed that today global economy can be described as the one in economy from traditional community to a knowledgeable one. It is "knowledge-based economy" is used as a means to transfer the former term while it is a tool in the latter. Knowledge in the an essential difference between them. Knowledge is a product in the

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 الاقتصادية والاجتماعية والسياسية (اقتصاص)

1.4 The Role of Education in the KBE:

While the traditional economy is based on goods, knowledge based economy is based on knowledge. As societies get more sophisticated, services started to be needed. We need knowledge or skilled persons more than hard workers. If someone, for instance, had a problem with his generator and also needed some apples to be picked from his garden, he would need the technical man more than an apple picker. It is the technical man's knowledge about how to fix the generator that makes him valuable. Picking apples can be done by any of his family members even the children. It is clearly noted that technical men, plumbers & programmers make more money than farmers and craftsmen. That's because knowledge is rare. Anybody can pick apples, but not anyone can fix technical errors. It is the knowledge and education they got from individual people or schools or universities (education centers) that help them earn a lot more money for a lot less work.

When a community reach a level where most of the total money being earned is actually intellectual rather than physical it has got a knowledge-based economy.

One may enquire "Can education help poor countries compete with rich ones? To answer this question some light was shed on poor countries having rare and valuable resources, for example oil. Generally, the rich countries get richer because they have machines that make them more productive, like factories and farm equipment. Poor countries can't compete. Nevertheless, if they have knowledge economy, they can. People who have computers and web connections can be programmers or web designers and those are rather cheap. And if they are coupled with good English language skills, it will be possible for poor countries like India and Bangladesh to skip one or two industrial eras and make a lot of money. They can easily compete with western countries on price as their living standards are much lower. (Rooney et al, 2007)

Accordingly, Education can provide a society with the best computer programmers, chemists, physicians, technicians and teachers. Provided with good universities, Research centers and a tradition of knowledge work the community can walk forward towards KBE.

1.0 Contribution of Higher Education and Scientific

Researchers to KBE:

Higher Education has a reciprocal effect on Knowledge Based Economy. In a sense that it affects KBE and KBE also affect it. It has become clear that higher education is the premier system for preparing the highly skilled workers Knowledge-based economy needs. Most surveys and studies showed that earning a college degree has led to a comfortable, middle class lifestyle. A rapid growing service economy that relies on a more diverse set of skills that favour workers with higher education.

Levy and Murane (١٠٠٣) stress that advances in technology has highly contributed to the restructuring of workforce. Computing technology has allowed companies to employ fewer workers using more sophisticated technology. This is because technology performs the more complex responsibilities of the job. However, the fewer workers needed should be technically skilled. Moreover, increasingly sophisticated skills are required to implement and manage the technology which replaces the manual tasks performed by less-skilled workers. (Cappelli, ١٩٩٣)

Carnevale and Desrochers (١٠٠٣) emphasize that changes in the structure of work have dramatically increased the demand for higher education. They showed by figures that ٣٠ years ago, only ١٨% of prime - age workers (age ٣٠ to ٥٩) had at least some postsecondary education. Meanwhile today the percentage has increased to more than ٧٠% of the workers in that age group have obtained some education beyond high school, and one-third of workers have baccalaureate or advanced degrees. They explained that most of the new jobs in occupations dominated by highly skilled managerial and professional workers have been created by economic restructuring. Office jobs, for example which is the fastest growing segment of the economy, have grown from ٣٠% of all jobs in ١٩٥٩ to ٣٩% today, while education and health care jobs have grown from

In order to compete with the more knowledgeable leader role in educating our workforce. Best investment is the one in economically developed countries, higher education must be given requiring college education. (<http://ftp.bls.gov/pub/special.requests/cp/opldata/>.)

almost double the rate of growth in jobs not between ٢٠٠٢ and ٢٠١١, almost double the rate of growth in jobs not indicate that jobs requiring higher education will grow by ٢٢% statistics of employment projections from the U.S. Bureau of Labour demand for college-educated workers will continue. The most recent globalization expected to persist, there is reason to believe that the Now that advances in Technology and increases in

economically. education for the vital role it plays towards developing countries economy, it is important to give the leadership to the higher medium and long term. In order to develop a knowledge-based to achieve sustainable growth and remain globally competitive in the The Knowledge-based economy presents the way forward

Conclusion:

among workers with similar credentials, those with the highest skill levels have the highest earnings. Gottschalk and Hansen (٢٠٠٣) agree with them stressing that even employees.

coworkers as their education makes them more productive college degrees earned higher salaries than their less-educated degree. Within what is called "non college jobs", those workers with wages provide the strongest evidence on the value of a college college education effects people living standards. They argue that Tyler et al (١٩٩٥) add that wages are good indicators that

educated workers, almost ٨٧% have at least some college education. ٥٠% to ٧١% over the past ٣٠ years. Technical jobs employ the most college educated workers with at least some college has grown from Education and health care jobs always employed large numbers of requirement within existing jobs. Their survey showed that demand for college-educated workers comes from rising skill ١٠% to ١٦% of all jobs. They concluded that much of the increased

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لجنة التوجيهية العالمية للتعليم العالي (اقتصاد المعرفة)

the development and exploitation of new technologies that increase productivity and economic growth. As much as government expense on higher education and research as much high value return they will get reflected on their citizens who get welfare and their institutions which become more productive and ahead technologically and economically.

List of References

١. Abramowitz, M. (١٩٨٩), Thinking about Growth, Cambridge University Press, Cambridge.
 ٢. Cappelli, Peter. ١٩٩٣. "Are Skill Requirements Rising? Evidence from Production and Clerical Jobs." Industrial and Labour Relations Review ٤٦, No. ٣ (April).

٣. Carnevale, Anthony P and Desrochers, Donna M. ٢٠٠٣. Standards for What? The Economic and Demographic Roots of Standards Based Reform. Princeton, NJ: Educational Testing Service.
 ٤. Drucker, P. (١٩٦٩). The Age of Discontinuity; Guidelines to Our changing Society. New York: Harper and Row.

٥. Drucker, P. (١٩٩٣). Post-Capitalist Society. Oxford: Butterworth Heinemann.

٦. Gottschalk, Peter and Hansen, Michael. ٢٠٠٣. "Is the Proportion of College Workers in Noncollege Jobs Increasing?" Journal of Labour Economics ٢١, No. ٢ (April).

٧. Levy, F and Murnane, R. J. (٢٠٠٤). The New Division of Labour: How Computers Are Creating the Next Job Market. Princeton, N.J.: Princeton University Press.

٨. Rooney, D., Hearn, G., Mandeville, T., and Joseph, R. (٢٠٠٣). Public Policy in Knowledge Based Economies: Foundation and Frameworks. Cheltenham: Edward Elgar.
 ٩. Stoneman, P. (١٩٩٥). Handbook of the Economics of Innovations and Technological Change, Blackwell, Oxford.

10. Tyler, John, Murane, Richard J and Levy, Frank. 1990. "Are More College Graduates Really Taking 'High School' Jobs?" Monthly Labour Review 118, No. 12 (December).

11. Author's tabulation of the Bureau of Labour Statistics Occupational Projections by Education. Accessed July 20, 2000 at : <http://ftp.bls.gov/pub/special requests/ep/optdata/>

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List of References

١. Abramowitz, M.(١٩٨٩), Thinking about Growth, Cambridge University Press, Cambridge.
 ٢. Cappelli, Peter. ١٩٩٢. "Are Skill Requirements Rising? Evidence from Production and Clerical Jobs." Industrial and Labour Relations Review ٤٦, No. ٢ (April).

٣. Carnevale, Anthony P and Desrochers, Donna M. ٢٠٠٣. Standards for What? The Economic and Demographic Roots of Standards Based Educational Reform. Princeton, NJ: Educational Testing Service.

٤. Drucker, P. (١٩٦٩). The Age of Discontinuity: Guidelines to Our changing Society. New York: Harper and Row.
 ٥. Drucker, P. (١٩٩٢). Post-Capitalist Society. Oxford: Butterworth Heinemann.

٦. Gottschalk, Peter and Hansen, Michael. ٢٠٠٢. "Is the Proportion of College Workers in Noncollege Jobs Increasing?" Journal of Labour Economics ٢١, No. ٢ (April).

٧. Levy, F and Murnane, R.J.(٢٠٠٤). The New Division of Labour: How Computers Are Creating the Next Job Market. Princeton, N.J: Princeton University Press.

٨. Rooney, D., Hearn, G., Mandeville, T., and Joseph, R. (٢٠٠٢). Public Policy in Knowledge Based Economies: Foundation and Frameworks. Cheltenham: Edward Elgar.
 ٩. Stoneman, P. (١٩٩٥). Handbook of the Economics of Innovations and Technological Change, Blackwell, Oxford.

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