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The Knowledge Economy and Higher Education in the Arab World

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ABSTRACT

The aim of the study was to analyze the relationship between the knowledge economy and higher education in the Arab world through answering the following questions:

1- What is the effect of the knowledge economy on higher education?

2- Can higher education in the Arab world cope with the knowledge economy?

The results of the study showed that the effect of the knowledge economy on higher education is mainly manifested in:

A. Establishing partnerships between universities and businesses.

B. Making universities centers of research and knowledge production.

C. Making universities provide students with the skills necessary for the knowledge economy.

D. Universities' adoption of life-long learning.

On the other hand, the results of the study revealed that Arab universities are currently unable to cope efficiently with the challenges and requirements of the knowledge economy because, generally speaking, they depend on consuming old and imported knowledge instead of generating new genuine knowledge, forge weak links with workplaces, give low priority to scientific research, lag behind in information technology, employ old and traditional teaching methods, lack autonomy and do not offer enough access.

KEYWORDS: The Knowledge Economy, Higher Education, Arab World, Life Long Learning.

INTRODUCTION

Knowledge has recently become the heart of the new economy. We live in the era of the knowledge economy in which success depends on brains, and the development of societies is based on their ability to harness knowledge (Economist, 1999; Nature, 1999) which the United Nations Report on Human Development views as "the new asset" (Taylor, 2002: 49). Knowledge has recently been considered as one of the main products of work and the main factor of production in key leading sectors (Luque, 2001). According to Stewart (1998), nations' wealth does not reside in rubber trees or diamond mines, but in the techniques and technologies for exploiting them. The traditional assets of production were land, labor and machinery. Though these assets are still important and financial capital is even more important, what really makes difference is how such assets are combined with knowledge to create value. In other words, as Drucker (1993) points out, knowing is assuming more importance than ever before, and becoming more important for nations' wealth than capital or labor.

Competitiveness in all industries, manufacturing, and services mainly depends on knowledge. One measure of this is the discrepancy between the physical assets recorded on the company's balance sheet and the value of the company as judged by the stock market. For example, the book assets recorded on Microsoft's balance sheets: buildings, land, machinery, cars, furniture, cash at the

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bank account form about only 6 percent of its stock market value. That is, about 94 % of its value in the eyes of investors lies in immaterial assets such as knowledge, research and development, people such as Bill Gates and brands such as Windows (Leadbeater, 1998). Such assets in the knowledge economy make huge difference and matter very much.

The relationship between knowledge and economy has recently been boosted. One of the forces driving change in new economy is knowledge capitalism: the drive to create new ideas and turn them into commercial product and services. When people buy products today, they do not mainly pay for the materials used, but for the intelligence embedded in their software and technology (Leadbeater, 1999). Economies are increasingly based on knowledge. A growing part of production in new economy depends on exploiting ideas (Economist, 2000). Knowledge and economy are nowadays inseparable. Knowledge has become the most decisive factor in the success and failure of economies.

The knowledge economy is about the growing value of knowledge as an input and output and about the rise of the weight of intellectual capital vis-à-vis real estate, plant, equipment and financial capital (Stewart, 1998). In the knowledge economy, which is also called "the intangible economy" "the weightless economy" "the immaterial economy" or "the new economy", knowledge is more important than physical products, machines and raw materials (Unesco Courier, 1998).

The knowledge economy focuses on using constant innovation, skill and use of communication and technology and lays emphasis on fresh ideas as tools to increase the value of material products. The major principle in the knowledge economy is that economic wealth is generated through skills, information and technology (Chapman and Pearce, 2001). David Blunkett, the United Kingdom's Secretary of State for Higher Education says that the powerhouses of the new knowledge economy and the tools for success and prosperity are innovations, ideas, skills and knowledge as much as natural resources and physical labor were in the past (Gilbert, 2000).

The knowledge economy, which Bedore and Obrien (1991) described as a system of distributing intelligence, is shaping many aspects of international affairs and restructuring the world. But to what extent is it influencing higher education?

Aim and Questions:

The aim of this study is to analyze the relationship between the knowledge economy and higher education in the Arab world through answering the following questions:

1. What is the effect of the knowledge economy on higher education?
2. Can higher education in the Arab world cope with the knowledge economy?

Significance:

The significance of this study lies in the following points:

1. Only little is known about the knowledge economy (Economist, 1999) and its nature, extent and consequences are still being hotly debated (Unesco Courier, 1998). For example, a recent search of the 1995-1999 Eric data base showed that there were only three papers that had both knowledge and economy as key words (Ilon, 2000).
2. The body of literature on the concept of the knowledge economy in the field of education is neither well recognized nor well established (Peters, 2002). The scarcity of research on the knowledge economy in the field of education, specially in the Arab world, gives additional significance to this study.

Method:

The descriptive analytical research method will be used to suit this theoretical study. A good number of articles, studies and research papers related to the knowledge economy and higher education will be reviewed, and the views of some experts in the field will be referred to. Finally, the data collected will be classified, analyzed and interpreted to answer the questions of the study.

First: How Does the Knowledge Economy Affect Higher Education?

In the era of the knowledge economy, higher education has become the most important economic asset and the backbone of the knowledge economy (Hoy, 1996). Higher Education is the key to the creation of the knowledge economy (Chapman and Pearce, 2001) for it is an investment in human capital and in the production of research and new knowledge (Peters, 2002). The knowledge economy, according to Guthrie and Pierce

(1990) is reshaping education in many countries all over the world. Many educational institutions are striving hard to respond to the requirements and challenges of the knowledge economy. The true challenge facing universities is contributing to the development of the knowledge economy (Butera, 2000). Successful universities, as Veltz (2001) points out, will be those which will best adapt to the knowledge economy. The knowledge economy is immensely influencing higher education. Such influence is manifested in many aspects such as:

1. Establishing Partnerships Between Universities and Businesses:

Increased demands from industries seeking skilled graduates require establishing close ties between universities and businesses (Hoy, 1996). The emergence of the knowledge economy makes forging close links between universities and the world of work a necessity. Such links enable higher education institutions to be job creators, promoting employment in information-based industries in the knowledge economy. On the other hand, they require making real changes in the curriculum, pedagogy and institutional governance of universities to promote relevance and quality (Allport, 2000). Also, a premium upon flexibility and innovation in curriculum should be placed to meet the demands of the workplaces of the industry (Jordan and Yeomans, 2003). In addition, the curriculum has to be customized to customers' needs. It should be changed to meet the needs of the new workforce, to provide the graduates with the tools to function in the knowledge economy and finally to reflect the transition of workers to knowledge-based workers. Also, high level of technology use is to be guaranteed, and flexible access to higher education institutions should become a necessity (Reid, 2001; Bedore and Obrien, 1991).

The knowledge economy has given impetus to knowledge-based industry which, according to the Economist (1999), accounted for over half of the rich-country businesses output in the mid 1990s. Many universities responded by adopting policies and making arrangements to train a new class of knowledge workers who have become very essential in the production process of most industries. Such universities have become knowledge enterprises producing, intermediating and disseminating knowledge to develop knowledge economies and train knowledge workers.

The main challenge facing many universities now is the ability to produce and retrain the number of graduates needed by industries. Many universities have focused on training knowledge workers who can rapidly be received in labor markets (Butera, 2000). In the knowledge economy, technology driven by innovation is vital for business success. So, establishing a partnership between a university and a place of work is in the interest of both of them. For businesses, staying close to the source of knowledge creation is a necessity. Proximity to a university campus matters a lot. Workers can be efficiently prepared to meet the evolving demands for skilled workers (Proenza, 2001). The knowledge economy made many higher education institutions very eager to establish strong ties with the world of work and business.

The knowledge economy is changing the nature of work causing a job shift toward computer based and information service work. This necessitates the training and reeducation of the work force. The universities must provide students with the tools to function in the knowledge economy in all academic disciplines. The curriculum must reflect the transition of workers to knowledge workers. This will require enabling graduates to interpret and apply systematic and abstract knowledge. Computer competencies that will support the emphasis on computer-aided decision making is also a requirement (Bedore and Obrien, 1991).

To succeed in the era of knowledge economy, universities, as Proenza (2001) believes, must work in partnership with businesses, industry and government to create clusters of innovations that will ensure stronger and larger sources of human capital. In many cases, the results of strengthening links between universities and local businesses were very positive. The university now ranks among the major local employers (Veltz, 2001).

Since knowledge, which has become increasingly pragmatic, and work have become inseparable (Alexander, 1999) a partnership between universities and the world of work has become inevitable for, as Putera (2000) argues, universities are promoters and partners of brainpower industries.

2. Making Universities Centers for Research and Production of Knowledge:

Moving towards knowledge-based economy requires focusing on investment in research (Rawolle, 2000). The knowledge economy cannot be generated without

scientific research. In the viewpoint of Guthrie and Pierce (1990), knowledge-based economy involves the process of creating new forms of scientific production which affect higher education institutions and requires conducting research. The development of research done by universities to cope with the demands of the knowledge economy may contribute to qualifying the labor force, facilitating transfers between science and industry and creating new industries (Allport, 2000).

Higher education has been viewed as the infrastructure of the knowledge economy and the engine for economic development. Universities, through research, produce knowledge that can be quantified in market environments to create employment, capital information, profits and surplus for reinvestment. In other words, through scientific research new companies are born, new jobs are made available, new wealth is created and the economy expands. Scientific research is considered as a key driver for economic development (Proenza, 2001).

So one of the major aspects of the impact of the knowledge economy on higher education is laying emphasis on research that produces new knowledge, which, in turn, is the essence of new economy. Higher education institutions should find ways to let the social institutions benefit from the research results . Also, research should be genuine and innovative to make real contribution to turning economy into the knowledge economy.

3. Making Universities Provide Students with the Skills Necessary for the Knowledge Economy:

In light of the close relationship between higher education and the market boosted by the rise of the knowledge economy, a new important role of universities emerged; that is providing students with the skills and abilities relevant to their future jobs. Among such skills and abilities, in the opinion of Carnevale and Desrochers (2003), are problem solving, interpersonal communication, reasoning abilities, behavioral skills, handling success and failure on the job, ability to learn and work in groups and adding novelty to ensure innovation. Ilon (2000) added: knowing to organize knowledge and analysis to tackle complex problems through building conceptual framework, that is an open ended structure where the agenda is only known one step ahead. Such a skill requires having the ability to learn, communicate and combine one's knowledge with that of other professionals.

So one of the tasks of universities in the era of the knowledge economy is to keep redefining the proper skills needed by businesses. In other words, as Bedore and O'brien (1991) say, the universities face the challenge of defining the skills mix requirement for the future to ensure that the right skills are available at the right time. One of the tasks of universities nowadays is to produce and retrain knowledge workers (Worklife Report, 1997). According to Rawolle (2002), moving towards knowledge – based economy requires "upskilling" of the work force across all sectors. This mission can be performed by higher education. There is a real need for a highly skilled workforce to meet the challenges of the knowledge economy. This means heavy investment in education and support for research institutions (Bently, 1999), and linking higher education to the production sectors. This requires sound planning.

4. Higher Education Institutions' Adoption of Life Long Learning:

In the era of the knowledge economy, life long learning has gained more attention. The shape, structure and purposes of higher education are undergoing transformation and experiencing drastic change as a result of the imperative for continuing education in the knowledge economy (Gilbert, 2000).

The major driver of the development of the knowledge economy will be a demand for life long learning. The largest part of life long learning will be delivered off campus and into the workplace or home. So, higher education will have to adapt in order to provide the forms of training which industry will demand. The supply of life long learning to the workforce will constitute the major part of the income of higher education institutions. Technology will play a significant role in the support of life long learning in the knowledge economy (Macfarlane, 1998). New learning technologies will facilitate the commodification of the curriculum into consumable packages on line and off campus (Blackmore, 2001).

In order to become knowledge enterprises that produce, broker and disseminate knowledge to develop the knowledge economy and train knowledge workers, universities should focus on life long learning and enter into extended networks with other institutions and organizations to run a variety of processes beyond their boundaries in order to reach their goals in research, education and other services (Butera, 2000) life long

learning is fueling education, and learning has become a lifelong process (Bedore and O'brien, 1991).

One of the reasons behind the transformation which higher education across the world is undergoing is the imperative of lifelong education in the knowledge economy (Gilbert, 2000).

Second: Can Higher Education in the Arab World Cope with the Knowledge Economy?

Most universities in the Arab world are unable to cope effectively with the knowledge economy for the following reasons:

A. Instead of being centers for producing knowledge, most Arab universities consume imported bodies of knowledge. In many cases universities transmit only what is already known (Wheeler, 2002).
B. The relationship between Arab universities and work is weak. There is no real channel between universities and the world of industry (Donati, 1998). Universities have no programmes to help workers upgrade their skills (Jamlan, 1995).
C. The emphasis laid on scientific research in the Arab world is limited. The Arab countries spend only .67% of their GNP on research (Abdul Muti, 1999). Lack of investment in human capital prevents many Arab countries from catching up with developed countries (Peters, 2002). Arab universities are short on research, which is a scarce commodity because it is in short supply (Wheeler, 2002).

In 1990, only 1.5% of the Arab workers worked in research and development; whereas in the developed countries the rate rose to 85.5% (Ghanim, 2000). Most Arab universities focus on leaching and neglect research (Donati, 1998).

D. Arab universities often educate their graduates for jobs that no longer exist. So, graduates in many Arab countries face unemployment in the double-digit rate (Wheeler, 2002).
E. Arab universities are behind in information technology (Wheeler, 2002).

So Arab universities in general are ineffective in facing two challenges created by the knowledge economy: Generating and disseminating adequate knowledge and training a new class of knowledge workers (Butera, 2000). This ineffectiveness is due to the fact that most Arab universities are inefficient, lack autonomy, rely on traditional teaching methods and do not offer enough access (Donati, 1998). Their present conditions should be changed to make them in harmony with the developments created by the knowledge economy. The Arab countries should concentrate on providing widespread access to communication networks for their companies and citizens, preparing educated labor force and consumers and establishing institutions that promote knowledge production and dissemination (Barga and Alberto, 1998). Arab universities should satisfy the changing demands on them by the knowledge economy which include flexible access, partnerships between universities and businesses, curricula designed to suit students' needs, a high level of technology use (Reid, 2001), producing, storing, renewing and sharing knowledge, generating breakthrough innovations, providing services that fit the changing needs of life, long education and training knowledge workers (Butera, 2000).

On the other hand, the Arab governments should view the creation of the knowledge economy as a way to increase their commitment to, and involvement in education, and avoid considering the knowledge economy as a means to create an elite class of "intellectual workers" or concentrate the economic power in fewer hands (Chapman and Pearce, 2001). If the Arabs are interested in entering the knowledge age they must act immediately (Wheeler, 2002). One of the main actions in this regard should be taken by Arab universities through taking part in the effective knowledge generation, transfer, production and diffusion, in light of the fact that knowledge has increasingly become a key strategic source for economic development (Bedore and Obrien, 1991). Such a great mission cannot be achieved with a high rate of brain drain in the Arab world. Until 1983, 100.000 Arab scientists and experts migrated to the United States (Hammadi, 1990). Brain drain is considered as an obstacle that stands in the way of succeeding in the knowledge economy (Work Life Report, 1997).

Conclusions

Knowledge has recently become a precious commodity which is indispensable for the new economy in which wealth is generated mainly through ideas, innovation, information, skills, and technology. The knowledge economy and higher education have increasingly become inseparable. The close links between the knowledge economy and higher education require making drastic changes in Arab universities, which are currently unable to cope efficiently with the knowledge

economy, to make them able to create new jobs, meet the needs of the new work force and provide students with the skills needed by the knowledge economy. This makes forging strong ties with businesses, becoming research centers and adopting life long learning absolutely necessary. Also, it requires stopping dependence on consuming old knowledge and embarking on producing new knowledge. So, boosting cooperation and coordination among Arab universities themselves first and among Arab universities and other international universities is inevitable. On the other hand, rich industrialized countries should help Arab countries to develop their knowledge economies in order to overcome one of the possible problems, which the knowledge economy may create, that is, the tension created by the 'knowledge gap' between the knowledge-rich countries and the knowledge- poor countries, because wealth creates the ability to generate knowledge, which can be used to create more wealth, and without distributing the benefits of such knowledge adequately, social disparities will increase (Nature, 1999).

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الاقتصاد المعرفي والتعليم العالي في الوطن العربي

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ملخص

استهدفت هذه الدراسة تحليل العلاقة بين الاقتصاد المعرفي والتعليم العالي في الوطن العربي من خلال الإجابة عن السؤالين التاليين:

1- ما تأثير الاقتصاد المعرفي على التعليم العالي؟
2- هل يمكن للتعليم العالي في الوطن العربي مواكبة الاقتصاد المعرفي؟

أظهرت نتائج الدراسة ان للاقتصاد المعرفي مظاهر تأثير على التعليم العالي يتمثل أهمها فيما يلي:

- إقامة علاقة شراكة بين مؤسسات التعليم العالي من جهة وأماكن العمل من جهة أخرى.
- جعل الجامعات مراكز للبحث العلمي وإنتاج المعرفة.
- سعي الجامعات لتزويد الطلاب بالمهارات الجديدة والمتغيرة التي يتطلبها الاقتصاد المعرفي.
- تبني الجامعات للتعلم مدى الحياة.

كما أظهرت نتائج الدراسة أن الجامعات العربية بشكل عام غير قادرة بأوضاعها الحالية على مواكبة تحديات ومتطلبات الاقتصاد المعرفي، لأنها كثيرا ما تعتمد على استهلاك معرفة قديمة معظمها مستورد، بدلاً من إنتاج معرفة جديدة وفعالة، ولا تقيم علاقات قوية مع أماكن العمل والإنتاج، ولا تعطي أولوية للبحث العلمي، ولم تحرز تقدماً كبيراً في مجال تكنولوجيا المعلومات، وتستخدم غالباً طرق تدريس تقليدية، وتواجه صعوبات بشأن استقلاليتها، وتضع قيوداً على سياسة القبول مما يقلل عدد الطلاب الملتحقين بها.

الكلمات الدالة: الاقتصاد المعرفي، التعليم العالي، الوطن العربي، التعلم مدى الحياة.

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