

Recent Trends in Higher Education Sector

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Abstract

The aim of this study was to examine the impact of globalization, technology, and competition on higher education institutions. Also, the study presented the ways in which these institutions respond to these factors.

This study discussed the issues of internationalization of higher education, the emergence of the entrepreneurial university, and the inter-organizational partnerships.

Introduction

During the last decade, globalization, technology, and competition have caused the ground to shift under higher education worldwide. Such factors interact with each other so that technology intensifies competition as well as enables globalization; globalization fosters competition and vice versa. So, it is impossible to consider one without introducing the others.

Globalization has resulted in higher education being regarded as a commercial product governed essentially by market forces. Information and Communication Technology (ICT) is driving and enabling the process toward knowledge-driven global economy. It allows higher education providers to accommodate the specific needs of students in terms of mode, pace, and place and time to study and also target groups locally and globally. Higher education institutions also no longer concern themselves only with the market-place of ideas, but also with the economic marketplace as they compete for students, staff, resources, and reputation.

Aim and Questions

The aim of this study is to examine the impact of globalization, technology, and competition on changing the role and nature of higher education institutions. The study will also present the ways by which these institutions respond to this change. More specifically, this study will answer the following questions:

- How do globalization, technology, and competition affect higher education institutions?
- What are the main globalized trends in changing higher education institutions?
- Why is it important to be concerned about higher education institutions?
- How do higher education institutions respond to the forces of globalization, technology, and competition?

Method

Since this study is theoretical, the researcher will review the literature dealing with the issues under investigation, and then analyze it and make conclusions.

The Impact of Globalization, Technology, and Competition

Historically, the university's role is to preserve culture and produce values, elite selection and reproduction of elite, and labor training and production of labor (Delanty, 2001). In the late twentieth century, universities were transformed from

institutions of cultural preservation into institutions for the creation of new knowledge, which can be utilized in business/industry. According to Newman (2000), this transformation was stimulated by the emergence of new providers of higher education; rapid advances in technology; new types of organizations entering the field; changing demographics; and globalization (i.e., higher education is becoming borderless). Particularly as a result of the global diffusion of neo-liberal ideas, universities are being encouraged or forced to implement new regimes of management that more closely resemble business/industry than communities/organization of “ivory-tower” academics/intellectuals (Delanty, 2001).

Because of this transformation, “universities are caught in a cross-fire of expectations” (Clark, 1998, p.131). According to Clark (1998), demands on universities outrun their capacity and created a “demand overloads” to respond: more students and more different types of students seek and obtain access; and more segments of the economy demand university graduates trained for highly specialized occupations.

One trend that shapes the higher education sector is the knowledge society and economy (including information technology [IT], globalization, and internationalization) (Neave & Geodegebuure 2001). The knowledge-based economy is characterized by the belief that wealth is increasingly dependent on the development and application of new knowledge by specialists knowledge workers. The emergence of a knowledge-based economy and the importance of globalization and IT place new demands on higher education.

Concern about Higher Education

In much of the world, there is an expectation that a university graduate will contribute to national development, and that higher education institutions will provide technical and professionally trained persons in the hope that economic development will follow. This view is in tension with another view, which stresses the role of higher education as a place for knowledge dissemination. In general, there are two perspectives on the role of higher education; one refers to higher education as a *social institution* while the other perspective refers to higher education as an *economic sector or an industrial branch* (Clark 1998; Henkel 1997). According to the first perspective, universities and colleges must attain educational and other goals related to their core activities, retain institutional legacies, and carry out important functions for the wider society, such as the cultivation of citizenship, preserving the cultural heritage, and the formation of character and skills of individual students. The

second perspective states that universities and colleges sell goods and services, train an important part of the workforce, and further economic development.

Global competition becomes the dynamo for introducing change and reform in education. Because education is very related to economic development and prosperity, a proliferation of educational reform ideas has spread all over the globe. Reform takes several shapes. Carnoy (2000) summarized the ways governments change the educational sector to respond to globalization. The government introduces competitiveness-driven reforms, finance-driven reforms, and equity-driven reforms. Competitiveness-driven reforms aim at improving economic productivity by improving the quality of labor. This may include expanding the educational level in order to increase the educational attainment among young workers. Finance-driven reforms means cuts in public sector spending and finding other sources of fund. Equity-driven reforms main goal is to increase equality of economic opportunity. A fourth kind of reform that can be added is governance-driven reform; that is changing the way power and decision-making is distributed.

According to Carnoy (2000), “the world economy is becoming more competitive, more global, and increasingly dominated by information and communications technology. This has made human capital-as technical knowledge and the capacity to respond rapidly to change-an even more crucial input into the production process.”(p.1)

The importance of higher education to the development is summarized by Castells (1994) as follows:

“If knowledge is the electricity of the new informational-international economy, then the institutions of higher education are the power sources on which the new development process must rely” (Castells, 1994, p. 16).

This statement points out the important role of higher education institutions in the development process. In a global world, higher education institutions are rising to meet the demands of their clients to support more effectively the goals of economic development. Universities have always been important centers of knowledge. In view of their traditional role in the production (i.e., creation/discovery), transfer, dissemination and handling of knowledge, universities and colleges are key socio-economic organizations in any society (Gornitzka & Maassen, 2000). However, universities are now, more than ever before, aware of their responsibilities and duties towards active contribution to the socio-economic development of local, regional and global societies.

Trends in Changing Higher Education Institutions

Strong “market forces” have caused institutions of higher education to reorganize themselves to be more sensitive to “market needs” and to produce employable graduates to suit employers' demands and to serve as sources of research-based knowledge. It is possible to see a number of common themes internationally in the reactions of higher education policy to globalization and its impact on changes at the institutional level. Common elements include the following (Paige & Leslie, 2000):

1. Significant per capital government budget reductions occurred in higher education.
2. There has been a significant push to diversify income sources.
3. An increased commodification of knowledge as intellectual property has occurred, particularly with regard to connecting the intellectual work of universities with community, business, and government interests and priorities.
4. Reorganization of higher education has been promoted by national governments, or in some cases state/provincial governments, to relate it more closely to national economic agendas.
5. The pressures for new forms of accountability have increased at all levels.
6. “Quality” movements in higher education have been established by governments, which are intended to monitor or audit institutional processes and outcomes, and funding is increasingly tied to the results.
7. Discourses of managerialism have become pervasive, imported into education from the private sector via earlier general public sector reforms.
8. There has been an intensified public and political debate about the role of universities in contemporary society.

Since the 1980s, universities in many countries have shifted from elite to mass higher education. At times of economic constraint, public universities have been experiencing pressures from governments to demonstrate maximum outputs from their allocated financial inputs. In line with the global reductions in public expenditures, cuts in university funding seem to be “inevitable.” The shift has been accompanied by a wave of managerialism, including the following: corporate managerialism, commercialization of research, and the commodification of knowledge (Mok, 2000)

Faculty members are not isolated from these changes. They are expected to participate in the education market by selling/ marketizing their skills and knowledge (Slaughter & Leslie 1997). Faculty are under pressures of increasing competition for scarce resources, tightening of budgets, the increasing need to raise private resources, the growth of managerialism over collegialism, the increased accountability demands, and the general intensification of academic work (Paige and Lesley, 2000). A study by Altbach (1997) of academic work in fourteen countries found that academics in many of these countries reported pressures to be more entrepreneurial, to teach larger classes, to be evaluated more often by students, to survive on fewer research dollars and relatively lower salaries, and to be generally more productive.

Knowledge Production

There is a growing consensus that knowledge—at least technological and scientific knowledge—is central to the process of economic growth and wealth accumulation. As the OECD puts it:

Knowledge in all its forms plays today a crucial role in economic processes. Intangible investment is growing much more rapidly than physical investment. Firms with more knowledge are winners in markets. Nations endowed with more knowledge are more competitive. Individuals with more knowledge get better-paid jobs. This strategic role is at the root of increasing investment by individuals, firms and nations in all forms of knowledge. (OECD 1996, p.22)

A knowledge-driven economy is one in which the generation and exploitation of knowledge play a predominant role in the creation of wealth (New Zealand Ministry of Information Technology, 1999). The theory behind the notion of a knowledge economy is that knowledge has superseded physical and tangible assets as the key foundation for wealth creation and economic growth. Rather than relying on traditional assets, such as land, capital, enterprise or labor, a knowledge-based economy emphasizes knowledge, skills, innovation and creativity (Neef, 1998). In the knowledge-based economy:

It is the production of ideas, not goods, that is the source for economic growth, and the reason that new computing and telecommunications technologies are so economically revolutionary in their nature is that they allow ideas—in the form of techniques, research results, diagrams, drawings, protocols,

project plans, chemical formulae, marketing patterns etc.—to be distributed instantaneously and in a coherent way to anyone, anywhere around the world. (Neef, 1998, p.9)

What are the implications of knowledge economy for the university? Pressure has certainly been put on higher education in the 1990s to provide evidence that it can be more useful for the world of work and more relevant to the social needs. So, “the more knowledge becomes a productive force, the more higher education is expected to contribute visibly to the economy and society” (Teichler, 2000, p.90). According to Paul (2001) and Gibbons, Limoges, Nowony, Schwartzman, Scott, & Trow (1994), the increase in supply of and demand for knowledge in the knowledge–economy not only challenges the university’s role as knowledge provider but also challenges the way in which the university’s knowledge is created, “owned” and distributed.

In the context of globalized processes to restructure economic and cultural activity, knowledge has ceased to be the exclusive domain of universities (Weert, 1999). The center of knowledge production has shifted and new forms of organization are emerging outside of existing academic disciplines and outside the traditional university. The notion of new sites of knowledge production and distribution refers to the idea that knowledge is no longer the exclusive domain of scholars in well-defined institutions with their clear-cut methods and quality standards. This production is shifting away from the university to a whole range of non-university locations, such as industrial laboratories, research centers, think tanks and consulting firms. Gibbons et al. (1994) refer to the new form of knowledge production as *Mode 2*, which contrasts with the traditional knowledge production, which they called *Mode 1*. The new mode of knowledge production has several characteristics: it is cross-disciplinary and the relevance and validity of scientific knowledge is determined not only by scientific criteria but also by utility, marketability and reflexivity (Daun, 2002). As a consequence, the “tradition of university-based research [the pursuit of knowledge for its own sake] is threatened by the encroachment of industry and the profit-making mentality and values” (Gibbons et al., 1994, p.76).

This situation (growing the importance of the knowledge economy) implies that corporations need to have and/or train a flexible workforce that is able to work in non-traditional environment, for example, spending part of the working week at home. Flexibility implies more freedom but also it requires more individual

responsibility for productivity. Although workers can benefit from this mode of work in terms of scheduling their time, and spending more time with families, corporations benefit more by needing less space for employees and paying fewer benefits, especially for part-time workers.

Institutional Response to the Globalized Trends

This section discusses the ways in which higher education institutions respond to the aforementioned changes and trends. While there are several kinds of response, only internationalization of higher education institutions, becoming entrepreneurial institutions, and establishing partnerships and alliances will be discussed.

Internationalization of higher education

Internationalization of higher education is becoming a distinct phenomenon. Internationalization refers more to the process of increasing cooperation between states or to activities across state borders, and rather reflects a world order in which national states (still) play a central role”(Wender, 2001,p.1). One of the main differences between internationalization and globalization is that internationalization calls for active bottom up approach (states play role) while in globalization it is top-down process that is uncontrollable by nation states.

The most widely acceptable and used definition of internationalization of higher education is the one used by Knight and De Wit (1997). They define internationalization as the process of integrating an international/intercultural dimension into teaching, research, and service functions of the institutions. There are several rationales for internationalization. In general they are clustered into four groups: economic, political, cultural, and educational rationales (National Agency for Higher Education, 1997). Focusing on one or more of these rationales depends on the level of policy whether it is at the national or institutional level. For example, the reasons to internationalize from a political point of view are perhaps more relevant to a national perspective than an institutional perspective, while the academic rational might be more related to institutional level policy. It is important to mention that these four groups of rationales are not distinct categories, but very interrelated (Knight and DeWit, 1997). Currently, the economic rationales seem to drive internationalization and shifting the paradigms from the traditional focus on cooperation to competition (Wender, 2001).

Internationalization of university activities takes several forms, such as internationalizing the curriculum, faculty works, establishing area studies programs,

and offering more foreign languages. The most visible aspect of the internationalization of higher education is academic mobility which implies the movement of students, staff, and faculty to countries other than their native (UNESCO, 2001). Student mobility is the most visible "phenomenon" of academic mobility. Countries such as the United States, United Kingdom, Canada, and Australia compete for hosting foreign students and view them as a "big business" (Altbach, 1998). For Example, the United states gained around \$13 billion dollars out of hosting more than half a million student in the year 2000 (Institute of International Education, 2001).

Entrepreneurial University

Moving into and living in knowledge-based economy transformed (and is still transforming) different aspects of universities and created an enterprise-like organization/institution. This new kind of university, which is called the entrepreneurial university, is characterized by strong relationship links with hi-tech industry and business (Clark, 1998); it, thus, entails market-like behavior by both management and faculty. Commercialization of higher education is taking governance not only away from academia but also from states. Also, the commercialization of research has led to much closer links with industry and, as a consequence, to more applied research agendas with the accompanying loss in curiosity-driven research (Currie, 1998).

The entrepreneurial university includes in its mission economic development in addition to research and teaching. This shift arises from both the internal development of the university and external influences on academic structure associated with the emergence of knowledge-based innovation (Etzkowitz, Webster, Gebhardt, and Terra, 2000). Three main works had discussed this issue: Slaughter and Leslie's (1997) *academic capitalism*, Clark's (1998) the *entrepreneurial university*, and Marginson and Considine's (2000) the *enterprise university*.

Clark's (1998) study reports research on five universities in Europe that made efforts in the 1980s and early 1990s to become more enterprising.¹ The entrepreneurial

university is said to involve the following changes in organizational structure:

¹ Enterprising universities are those that seek to move away from "close governmental regulation and sector standardization. They search for special organizational identities; they risk being different; they take chances in [the market]. They adhere to the belief that the risks of experimental change in the character of universities should be chosen over the risks of simply maintaining traditional forms and practices." (Clark, 1998, p.xiv).

- The strengthened steering core: enterprising universities become quicker, more flexible, and especially more focused in reactions to expanding and changing demands of business/industry; embrace central managerial groups and academic departments; and reconcile new managerial values with traditional academic ones.
- Expanded development periphery: enterprising universities exhibit a growth of units that cross the old university boundaries to link up with outside organizations and groups (e.g., the establishment of the offices of business/industry relations and technology transfer and the interdisciplinary project-oriented research centers).
- Diversified funding base: enterprising universities, in the face of cutbacks in institutional funding by government, turn to other sources of revenue: competitive for grants and contracts from government research councils as well as private income sources (e.g., royalty income from intellectual property, student fees, contracts or donations from business/industry, and alumni fundraising).
- Stimulated academic heartland (i.e., the core of the traditional academic values): the enterprising university encourages would-be innovations and change takes place (one department and once faculty after other needs to become an entrepreneurial unit).

Slaughter and Leslie (1997) examine the changes in the source and allocation of funding faced public research universities within four large English-speaking countries (Australia, Canada, the United Kingdom and the United States). The central argument of their work is that the structure of academic work is changing in response to how the emergence of global markets is being interpreted by political leaders, economic elites, university administrators, and academics. As international competition for global market share increases, some countries develop higher education policies and R&D policies that in the end reshape faculty's work. Academic capitalism exists when institutions and faculty members engage in market behaviors (i.e. for-profit activities: launching spin-off companies, building endowments, seeking patents, securing royalty and licensing agreements, raising tuition and entering into business-education partnerships) and market-like behaviors (i.e., competing for funding whether it means seeking external research grants and contracts, service contracts, partnerships with industry and government, or technology transfer activities).

The faculty and administrators who were asked to discuss the advantages and disadvantages of academic capitalism mentioned prestige as the most important benefit, followed by enhanced university relations with external groups, such as business/industry firms, the public, and government agencies. They also believe that the universities' commercial activities were important as a way of recruiting postgraduate students as well as gaining some laboratory equipment. Most of the "costs" of academic capitalism focuses on the issue of commercialized knowledge as being at odd with traditional values of university (i.e., shifting the focus from basic research to applied research and from knowledge for social benefits to knowledge for private profit).

Marginson and Considine (2000) state that the *Enterprise University* has the following features:²

- Strong executive control with presidential-style leadership, bearing significant institutional autonomy and capable of strategic initiative, and mediating much or most the relationships between, on one hand, the external world (government, professions, civil society), and, on the other hand, the internal world of the academic units;
- University missions, governance and internal administration (including quality assurance and performance regimes) became increasingly business-like in character, though the University does not become simply another business;
- The increasing marginalisation of the units of traditional academic governance — academic boards, faculty assemblies and the like — and their partial replacement by executive groups and new semi-formal and informal IT-based mechanisms for communication and top-down consultation;
- A quasi-market 'economy' within the University, which combines (1) performance-regulated allocations and zero-sum competition; (2) external earnings, driven by under-funding, in fees, research and consultancy services and other forms of 'soft income;' and (3) growing resource inequalities between disciplines.
- At the system level, there is a growing scarcity of public funds and relations of competition between institutions, accompanied by initiative in which university

² Marginson and Considine's (2000) work is very similar and overlaps with that of Clark's and Slaughter and Leslie's. But the bottom line of the *Enterprise University* is "not profit, nor is it teaching and research, nor is it public or community service. It is the competitive position of the institution, grounded in its relative prestige and resources, as *an end in itself*" (p.5).

leaders choose from a restricted menu of developmental strategies (e.g., IT-based initiatives such as on-line courses, full-fee business education for international students, off-shore campuses, etc.).

The development of the enterprise university creates a new internal organizational structure and culture while at the same time encourages universities to establish closer and more extensive relations with business/industry to obtain money needed for survival and to develop their research capabilities needed for prestige and competitiveness.

Partnerships and Alliances

The increased demand and complex challenges makes it extremely difficult for any institution to have sufficient human or financial resources or the know-how to do it alone. Universities worldwide are forming more partnerships-whether with institutions in other countries, or with other kind of organizations-to enhance their capacity in a variety of areas. There are two types of partnerships and alliances: instructional alliances, and partnerships with business/industry.

Instructional alliances centers on the delivery of instruction. These alliances allow partners to offer programs or specialties that they cannot offer alone. Alliances are emerging between traditional universities and for-profit corporations that package and deliver instructional information. Examples are the Global University Alliance that include 10 universities in Australia, Canada, Hong Kong, New Zealand, and the USA, and Universitas 21 (U21), a consortium of 17 universities from 9 countries that is going to target 90 million students by the year 2010 (Allport, 2001).

There are several reasons for the shift in closeness between university and industry. According to Wright (1990), this include:

- The rapid advance of technological knowledge and the growth of the sophistication and complexity of the production process. This lead to the rise of the demands for a more highly skilled workforce.
- The movement from elite to mass higher education.
- Changing social and cultural environment is beginning to form new conceptions of education, quality and personal fulfillment.
- The force of internationalization—the growing integration of the world economy.

The capacity to initiate new forms of academic-industrial relations depends upon a wider infrastructural capacity to capitalize knowledge. At the level of the university the process of capitalization³ has occurred in three stages: the securing of intellectual property, the restructuring of research groups to generate a large intellectual property base, and the establishing of corporate vehicles within universities to maximize the return on intellectual property. According to Etzkowitz and Leydesdorff (1997), there are two contrasting models of academic-industry relations: knowledge flows and the triple helix. The knowledge flows model is premised upon separate academic, industrial, and governmental spheres. According to this model, universities produce knowledge, transmit it through publication, and ideally do not sell it. This model specifies institutional missions narrowly: universities are assigned functions of education and research; industry, production; and government, regulation. In contrast, the triple helix model is based on ties among overlapping institutions. This model captures multiple reciprocal relationships at different points in the process of knowledge capitalizing. Etzkowitz (2002), describes several dimensions of this model. The first one is internal transformation in each of the helices; the second dimension is refers to the influence of one helix upon another. The triple-helix model implies an equal, yet interdependent relationship between university, industry, and government.

The form that university-industry relationship takes differs widely from country to country. Many of the similarities and differences begin with the nature of higher education in each of the countries, the cultural norms that dominate, as well as the economic and legal structure (Rahm, Kirkland, & Bozeman, 2000). Relationship between university and industry may take several forms. Teichler (1999) discussed general ways to collaboration between universities and industry such as:

- involvement of practitioners in curriculum development;
- participation of industry in decision making processes, for example through membership on boards or advisory councils;
- part-time teaching by practitioners;
- internships in industry for students prior to or during the course of study; and
- involvement of students in research projects by industry

³ Capitalizing knowledge refers to the “translation of knowledge into commercial property in the literal sense of capitalizing on one’s intellectual (scientific) assets; more generally, it refers to the way in which society at large draws on, uses, and exploits its universities, government-funded research labs, and so on to build the innovate capacity of the future.” (Etzkowitz, Webster, and Healy, 1998, p.9)

Universities and firms only collaborate when it is in their mutual interest. To have a successful relation, faculty should have positive attitudes toward industrial firms. In a study of 1000 faculty and 115 universities in the United States, Lee (1998), found that academics are generally in favor of close university-industry collaboration on technology transfer. Academics would support strongly the new policy toward university-industry collaboration if they think their collaboration is tied closely to regional economic development.

The most important reason compelling universities to collaborate with industry is to improve their financial situation (Fairweather, 1988); access to a source of interesting new research problems (Haag, 2001), and access to scientific and technical information in which industry has great expertise, exposing students to practical problems, access to potential avenues of employment for graduates (Geisler and Rubenstien, 1989).

Industry is motivated to work with higher education institutions to improve technology transfer and fund basic research in the universities when it directly translates into marketable products (Fairweather, 1988). Corporations working with universities can gain access to highly skilled personnel. This will give them access to undergraduate as well as graduate students who may work for the industry. Also, industry seeks collaboration in order to improve its competitive edge and productivity compared with other corporations.

Conclusions

Universities worldwide are undergoing and subject to an increasing pressure created by the dynamics of globalization, technology, and increasing competition. All these factors have profoundly impacted universities' traditions, structure, staff, faculty, and students. In order to adjust to the new realities, universities are internationalizing their activities and work, becoming more entrepreneurial, and establishing new alliances with similar institutions or with industry and business. A phenomenon that deserves more investigation is the issue of merging higher education institutions, which is basically occurring because of the financial pressure.

Keeping in mind all what have been said about the issues facing higher education institutions and the ways they adjust themselves to these issues, it is important to reflect at the situation of higher education institutions in the Arab States to see where are they of all these changes.

References

Allport. C. (2001). Managing Cultural Difference in defense of the public interest:

Universities and Business – a new partnership? Paper prepared for conference “*The Higher Education Enterprise: Partners, Profits and Politics*”, National Education Association, Higher Education Conference. San Diego March 2-4, 2001.

Altbach, P. (1997). *The International Academic Profession: Portraits of 14 Countries*. San Francisco, CA: Carnegie Foundation for the Advancement of Teaching, Jossey-Bass.

Altbach, P.(1998). *Comparative higher education: Knowledge, the university, and development*. Greenwich, CT: Ablex Publishing Corporation.

Carnoy, M. (1999). *Globalization and educational reform: What planners need to know*. UNESCO: International Institute for Educational Planning

Carnoy, M. 2000. Globalization and educational reform. In Stromquist,N., Monkman, K. (eds.) *Globalization and education: Integration and contestation across cultures* (pp. 43-63). New York: Rowman & Littlefield Publishers, Inc.

Castells, M. (1994). The university system: engine of development in the New World Economy. In J. Salmi & A. Verspoor (Eds.), *Revitalizing higher education* (pp 14-41) Oxford, England: Pergamon.

Clark, B. (1998). *Creating entrepreneurial universities: Organizational pathways to transformation*. Oxford: Pergamon Press.

Currie, J. (1998). Introduction. In J. Currie & J. Newson (Eds.), *Universities and globalization: Critical perspectives* (pp.1-15). London: Sage.

Daun, H. 2002. Globalization and national education systems. In In Daun, H (ed.). 2002. *Educational restructuring in the context of globalization and national policy* (pp.1-33).

Delanty, G. (2001). *Challenging knowledge: The university in the knowledge society*. London: The Society for Research into Higher Education.

Etzkowitz, H. (2002). *The triple helix of university-industry-government: Implications for policy and evaluation* (Working paper 2002.11). Stockholm: Swedish Institute for Studies in Education and Research.

Etzkowitz, H., & Leydesdorff, L. (1997). Introduction: Universities in the global knowledge economy. In H. Etzkowits & L. Leydesdorff (Eds.), *Universities and the global knowledge economy: A triple helix of university-industry-government relations* (pp.1-11). London: Pinter.

Fairweather, J. (1988). *Entrepreneurial and higher education*. Washington, DC: ASHE-ERIC Higher education.

Geisler, E., & Rubenstein, A. (1989). University-industry relations: A review of major issues. In A. Link & G. Tassef (Eds.), *Cooperative research and development: The industry-university-government relationship*. Boston: Kluwer Academic publishers.

Gibbons, M., Limoges, C., Nowony, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge*. Thousand Oaks, CA: SAGE Publications.

Gornitzka, A., & Maassen, P. (2000). National policies concerning the economic role of higher education. *Higher Education Policy*, 13, 225-230.

Haag, D. (2001). *Higher Education Reform: Getting the incentives right*. University Twente, Netherlands: Center for Higher Education Policy.

Henkel, M (1997). Academic values and the university as corporate enterprise. *Higher Education Quarterly*, 38, 5-31.

Knight, J., & de Wit, H. (1997). *Internationalization of Higher Education in Asia Pacific Countries*. Amsterdam: EAIE.

Lee, Y. (1998). University-industry collaboration on technology transfer: Views from the ivory tower. *Policy Studies Journal*, 26(1), 69-85.

Marginson, S. and Considine, M. (2000). *The Enterprise University: Power, governance and reinvention in Australia*. Cambridge University Press, Cambridge and Melbourne.

McGinn, N. (1996). Education, democratization, and globalization: A challenge for comparative education. *Comparative Education Review*, 40 (4), 341-57.

Mok, K.H.. (2000). Impact of Globalization: A Study of Quality Assurance Systems of Higher Education in Hong Kong and Singapore. *Comparative Education Review*, 44(2), p. 148-174.

National Agency for higher education. (1997). *National policies for the internationalization of higher education in Europe*. Sweden:NAHE

Neave, G., & Geodegebuure, L. (2001). *Higher Education and the stakeholder society*. University Twente, Amsterdam: Center for higher education policy studies.

Neef, D. (1998). Introduction: Rethinking economics in the knowledge-based economy. In D. Neef, G. Siesfeld. & J. Cefola (Eds.), *The economic impact of knowledge* (pp.3-16). Boston, MA: Butterworth Heinemann.

Newman, F. (2000). *The Futures Project: Policy for higher education in a changing world-Position paper*. Retrieved Jun 16, 2002 from <http://www.Futureproject.org>.

New Zealand Ministry for Information Technology. (1999). *The knowledge Economy*. Retrieved June 20, 2002 from http://www.med.govt.nz/pbt/infotech/knowledge_economy/knowledge_economy.pdf

OECD. 1996. *Technology, productivity and job creations, I and II, OECD Job strategy*. Paris: OECD.

Institute of International Education. (2001). *Open doors*. Washington, D.C.

Paige, P., & Lesley V. (2000). Globalization and higher education policy. *Educational Theory*, 50 (4), 449-466.

Paul, J. (2001, November). *What makes a good knowledge-based economy worker?* Paper presented at Rethinking leadership for innovation in Europe: Policy and practice for a knowledge economy. Ferrara, Italy.

Rahm, D., Kirkland, J., & Bozeman, B. (2000). *University-industry R & D collaboration in the United States, the United Kingdom, and Japan*. Dordrecht, the Netherlands: Kluwer Academic Publishers.

Slaughter, S., & Leslie, L. (1997). *Academic capitalism: Politics, policies and the entrepreneurial university*. Baltimore, MD: The John Hopkins University Press.

Teichler, U. (1999). Higher education policy and the world of work: Changing conditions and challenges. *Higher Education Policy*, 12, 285-312. Teichler, U. (1999). Higher education policy and the world of work: Changing conditions and challenges. *Higher Education Policy*, 12, 285-312.

Teichler, U. (2000). New perspectives of the relationships between higher education and employment. *Tertiary Education and Management*, 6, 79-92.

UNESCO. (2001). Education World Forum: Final Report. Dakar, Senegal 26-28 April. Paris. UNESCO & World Bank.

Weert, E. (1999). Contours of the emergent knowledge society: Theoretical debate and implications for higher education research. *Higher Education*, 38 (49-69).

Wender, M. (2001). Internationalization policies; about new trends and contrasting paradigms. *Higher education policy*, 14 (3), p.249-259.

Wright, P. (1990). *Industry and higher education: collaboration to improve students' learning and training*. Buckingham: Open University Press.

Recived 20/10/2004.