PASCAL SPECIAL INTEREST GROUP
Public Sector Interface

Theme: Regionalism and the changing role of Universities
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Introduction:

The purpose of this PASCAL Special Interest Group (SIG) is to examine the interface between PASCAL and the public policy sectors. While this topic is a very broad, it cuts across sectors and issues, including innovative resource sharing and the role of institutions of higher education, and those organizations that develop policy. It includes the development of intercultural activity.

In this third issue, the themes of regionalism and the changing role of universities are considered.

Ilpo Laitinen, of the city of Helsinki (Finland) and Chair of the SIG, gives an introduction to Garcia's paper by reviewing Knowledge Management (KM) and Organisational Learning (OL), including the process of situated learning and 'social economy' how these concepts are interrelated to one another and very much connected to learning regions. He concludes by suggesting different roles for Higher Education Institutes (HEI) within knowledge based development and provides challenges for PASCAL to consider. The article led me to read more about Ezio Manzini and his ideas on sustainable design, including cosmopolitan localism, creative communities, collaborative networks and convergence.

Blanca C Garcia (Mexico) focuses on Complex Learning Systems and discusses how Knowledge Management was triggered by notions such as learning regions, intellectual capital systems, innovation cluster, global networks and capacity building strategies and Knowledge City concepts. No matter what terms are used I found myself drawn to the 'old' ideas that research, brain power, training and education are worthwhile investments for cities and regions. I was also glad to see emphasis on learning in and for the workplace and how the model of Technological Universities in Mexico provides diversification of technology training across the country – in rural and urban locations.

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From learning organisations to knowledge management and to learning regions

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Depending on the school of thought or perspective and on the emphasis of the supplier of the definition, the concept of a learning organisation (LO) or organisational learning (OL) and that of competence management or knowledge management (KM) have been offered as a superordinate concept or primary premise for the two core elements. However, the current trend in KM and LO work is to consider them to overlap and be linked to one another. Knowledge management refers to controlling knowledge – i.e., to how knowledge in the organisation is converted into a competitive advantage. Considering this questions involves the intangible quantities of the organisation's capital reserve. There are four perspectives through which KM can be defined: the learning and education philosophical, economic, technical, and organisation-theoretical.

Relating those concepts to learning regions, the goal is to see KM and OL as supplementary to one another instead of emphasising their separateness and differences. Thus, in recent years, attempts have been made in various contexts to see knowledge management and organizational learning as factors related to each other and to the formation and distribution of information, alongside production of information and understanding in order to foster learning region as a community wherein people can learn, participate and change the system itself.

Jean Lave and Etienne Wenger (1991) postulated that especially situated learning is a process, which takes place by participation, not in an individual mind and the ability to learn is in close relation to the ability to perform tasks. According to Wenger, mastery of knowledge requires especially newcomers to move toward full participation in sociocultural practices of a community.

According to Ezio Manzini there is another "important reason that makes creative communities, cosmopolitan localism, distributed systems and collaborative networks, and their possible convergence, so important". According to him the emerging economy, a 'social economy', can be observed in many fields such as education, welfare and energy. The characteristics of it are: *the intense use of distributed networks to sustain and manage relationships enhanced by information communication technologies (ICTs); blurred boundaries between production and consumption; an emphasis on collaboration among local units; and a strong role for values and missions* (2012, pp3-5).

When dealing with knowledge based development, regionality and HEIs it is also very important to realize the clashing values of those drivers (aforementioned four different perspectives). To support the universality of knowledge and research it is important to question what mechanisms can be developed to

encourage interdependencies and linkages between learning regions. HEIs roles within knowledge based development may be distinguished eg. by following role diversification.

- HEIs as networked experts: HEIs offer R&D services as separate entities within the collaborative networks
- HEIs as knowledge engineers: refers to practical expertise and knowledge made available online for the (end)users
- HEIs as para-professional actors: HEIs supply on demand basis e.g. by upskilling labor force, training employees and consulting programs and organizations etc. especially in the cases when those could not be successful unaided and without supervision
- HEIs as embedding knowledge: approach in which the practical expertise is built into systems, processes or working practices and knowledge is thus that entity's integrated part

What could Pascal do?

1. The siloed departmental curriculum need to be developed and changed towards cross-disciplinary learning and thinking.
2. Great challenge is to seek and engage creative minds and develop new student, learner centric approaches around them. Cross-disciplinary thinking is a real challenge especially in science, technology and engineering. HEIs need to think how these needs serve as curriculum change drivers.
3. HEIs need to balance new platforms of learning and support that extends beyond the academic settings, and define tailored approaches across the platforms.
4. There is a need to expand Recognition of Prior Learning to workplace learning, practical knowledge, active knowing and cross-disciplinary, multi-professional learning platforms.

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Regionality and the changing role of Universities in Latin America

Blanca C. Garcia, El Colegio de la Frontera Norte, México.

Complex Learning Systems – An Introduction

The third Knowledge Management (or *Knowledge-based development, KBD*) generation was triggered by notions such as **learning regions** that started to emerge as a framework for understanding development in a multi-dimensional, highly networked setting beyond city limits (Florida, 1995). Other parallel notions shaping this third generation are intellectual capital systems (Stewart, 1997), innovation clusters (Porter, 1995), global networks (World Bank, 2002), capacity building strategies (UNDP, 2002) and other related concepts. Such rich blend of theory and practice, is finding new theoretical expressions in frameworks such as the Knowledge City (KC): a city purposefully pursuing knowledge as a means for development (Carrillo, 2004), the Ideopolis: a city of Ideas and inclusive communities (Work Foundation, 2002); the Creative City, as a city driven by the creativity of its creative class and milieu; and the Intelligent City which heavily relies on social intellect, IC mapping, virtual connectivity and the strong capacities of its citizen story-tellers (PricewaterhouseCoopers, 2005).

Knowledge City Concepts in Learning and Education

Indeed, "Great universities and great cities go hand in glove: both are driven by knowledge and innovation" (Work Foundation, 2005). So are social networks, social capital and the quality of life in a city, as present and futuristic scenarios are demonstrating in the context of the knowledge economy (Burt, 2000). From Weber's classical definition of a city as: "a settlement that does not live on agriculture but on trade and services" (Weber, 1958:66), cities as units of analysis for research are progressively being understood primarily as productive entities (Amin, et.al. 2003:3; Carrillo, 2004:29). Following this worldview, Andy Hill, the protagonist of Vignette 3.1, is living in what has been defined as a Knowledge City (KC), which is "short hand for a regional economy driven by high value added exports created through research, technology and brain power (Melbourne City Council, 2002; in Ergazakis, et.al. 2004:6). A Knowledge City invests significantly more of the community's income (GDP) in education, training and research" (Melbourne City Council, 2002; in Ergazakis, et.al. 2004:6). In fact, it is:

> *a region that bases its ability to create wealth on its capacity to generate and leverage its knowledge capabilities. In a knowledge capital, enterprises and people link to form knowledge-based extended networks to achieve strategic goals, cultivate innovation and successfully respond to rapidly changing conditions". (Chatzkel, 2004:62).*

In brief, a Knowledge city is a city 'purposefully designed to nurture knowledge" (Edvinsson, 2002; in Dvir and Pasher, 2004:17); a city "in which its citizenship undertakes a deliberate, systematic attempt to identify and develop its capital system, with a balanced and sustainable approach" (Carrillo, 2004:34).

But although the terminology is new, there are a number of historical examples of cities that follow the KC pattern. In its own way, Andy's story might be evoking in 2008 historical elements of core cities of the past, where open, informal places were the space for knowledge to be liberally shared. As modern Agora, *Knowledge Cities* encompass the underlying assumption that knowledge and ideas are created mainly through conversations (Dvir and Pasher, 2004:17, 21).

Such assumption positions learning, innovation and clustering at the core of some theories of knowledge-creation, strongly influenced by Michael Porter's work (1995). Not surprisingly, recent literature on the role of universities in the knowledge-based economy tends to highlight three essential functions: the training of highly qualified personnel, the performance of research and the transfer of knowledge for economic growth (Wolfe, 2004). It is argued in this literature that "the joint production and transmission of new knowledge occurs most effectively amongst economic actors located close to each other" (Wolfe, 2004:16). It is also thought that 'synchronous face-to-face interactions matter for transmitting (non-bit string) knowledge' (Quah, 2002:39), as

> *Researchers must work somewhere and so might well cluster geographically because communication of tacit knowledge, not digital goods, is most efficient in close physical proximity. (Quah, 2002:36).*

Workplace Learning and Technological Universities: A Model

Hence, learning in the workplace, working and/or having a practical experience on-the-job have triggered new Higher Education models around the globe, with particularities depending on the culture and context in which they emerge. In Latin America, Technological Institutes following the US model and Technological Universities following a more indigenous model, are part of the educational infrastructure of the Regionality and the changing role of Universities in Latin America. They encourage students to develop known skills and to learn new skills, appreciating both in academic or workplace contexts (Orrell, 2001).

According to the Organization for Economic Co-operation and Development (OECD), a definition of competence is "all those skills and abilities acquired through an effort of deliberate and systematic to carry out complex activities" (OECD, 2004). Another working definition for competency is "the capacity that is achieved by combining knowledge, skills, attitudes and motivations and to apply it in a specific context: in education, work or personal development" (ibidem).

The differentiation between general competences (Professional) from skills (specific) is considered to be the profession-based competencies that are acquired during the undergraduate years. It is the integration of knowledge, skills and attitudes that enable the professional to perform and deliver quality products and/or services. The concept of occupational competency as: the productive capacity of an individual that is defined and measured in terms of performance in a given job context, and reflects the knowledge, abilities, skills and attitudes necessary for the realization of an effective and quality (Council, 2003).

Technological Universities in the heart of Mexico

In Mexico, according to educational planners, there was a shortage of technically qualified professionals whose jobs were being occupied by graduates: "there are short courses and hence the strategic nature of Technological universities is to fill it "(La Jornada 09/02/99). To support his argument of the vacuum in the system of higher education, the Mexican authorities used the data provided by the International Standard Classification of Education (ISCED). A model known as Technological Universities (UT) system initiated in 1991 with the creation of three units, which evolved to 66 sites today. Distributed in the national territory, UTs are emblematic of the purposes of diversification of the technological sector of higher education in Mexico. They provide intermediate professional training as well as solutions to job demands on specialized technical training.

UTs aim to teach more than the "know-how". UNESCO describes the curriculum of these institutions encompasses two major axes: the area of knowledge and the "level of knowledge". They teach in four basic dimensions: (1) Basic Sciences; (2) Knowledge Technicians; (3) Languages and methods, and (4) Sociocultural training. They graduate Higher University Technicians (TSUs) on three levels: "know-how," "knowing" and "being" (CGUT, 2000: 37). Also, by diversifying the higher education system and specifically the vocational nature of their courses and the time-frame of studies, the UT model sought primarily to serve disadvantaged social segments. For this reason, a former official the Undersecretary of Higher Education considered that the creation of the UT

It was part of the policy of "equity" in higher education in Mexico.

UTEZ

A particular case of UTs is the Technological University Emiliano Zapata (UTEZ, by its Spanish name) in Cuernavaca Morelos. It is located approximately one hour and a half from the capital city, in Central Mexico. Amongst other degree programs, a four-year engineering degree in Information Technologies (ITs) is offered at UTEZ. This research began with the first generation of IT with students on last term before graduation, and the interest was to observe how well they were prepared to undertake their practicum responsibilities and the actual outcomes after they finished it (in around three-month time). It was observed that during the first three generations, **research** started to show some evidence of the strategic relationship between competencies, performance, workplace learning and development. **Research** shows a comparison of perceived utility for some professional and occupational skills amongst graduates. Moreover, if we overview the perceived importance of occupational competencies amongst UTEZ students, the **practicum** has clearly a specific weight in the scope and competency development since it is in the context where all the knowledge, students have taken advantage of the gap perceived between employment and professional training. Most of them seem to have potentialized their work opportunities by being immersed in spaces of production where learning and continuous improvement were part of their practice in their profession. Moreover, the competency-based educational model in higher education is a choice that seeks to generate training processes of higher quality, but without losing sight of the needs of society, the profession, the development discipline and academic work. This responsibility implies that the

educational institution promoted consistent actions in the pedagogic and didactic areas that translate into real changes in teaching practices; Hence the importance that the teacher also participate continuously in the actions of training and training that will enable it to develop competencies similar to those which it seeks to train students.

UTEZ, within the UTs system clearly created opportunities in places where there was no offer for higher education. Potential HEIs students who were interested in higher education had to travel long distances to migrate from their place of origin and sometimes lacked the necessary financial resources. The external evaluations show that most students come from lower middle class origin, so equity is perceived as one of the major achievements of this educational model (Quoted in Flores-Crespo 2005: 77).

Final Thoughts

Global workplaces are becoming a rule more than an exception, and international work standards are increasingly observed at all levels of society. Education and educational systems are no exception to that process. Currently, competency-based education is clearly a general trend, which extends to most universities. Their presence within the educational scene requires to be studied, in order to know and understand it, as well as identify the options that exist for its implementation and to choose which can adapt to the characteristics and history of the institution.

Hence, as this article advances practical evidence of knowledge-based initiatives in key city-regions, qualitative as well as quantitative data from research has led us to identify intangible city capitals likely to emerge. In such context, a glimpse of the role played by Higher Education systems, has revealed them as articulators of knowledge-based urban development within the rural and urban communities. Hence, a qualitative change in KBD perspectives is deemed to be identified where practitioners, academics and policy makers truly converge (Yigitcanlar, et.al., 2012).

Educational systems actually feature an integral account of value elements –both tangible and intangible- within city-regions. This scope aimed to determine the city or urban community's potential for knowledge-based development through its capital accounts. As a profile for urban capitals, the resulting report aimed to converge with parallel integrative exercises such as the one done by Price Waterhouse Coopers (2005) on Cities of the Future from cities' knowledge capital base.

Also, following a deeper sense of urgency, this article has aimed to contribute to the uncharted KBD territories where education and K-City schemes for sustainable development are also more than ever likely to be revealed. The gap between KBD and learning environments might be closing if we continue aiming to understand how urban communities are built, through learning, conversations and knowledge sharing.

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