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Knowledge Productivity and the Corporate Curriculum

Abstract: Perceptions of education and learning in organizations are changing rapidly. The significance of knowledge, learning, and working has experienced a revolution that has gone virtually unnoticed. Contrary to the conviction that human beings represent an organization's most important resources and capital, the reality of restructuring and business process re-engineering focus on improved productivity and reduced labor costs. A process of segregation between highly talented 'knowledge workers and service personnel evolves. Employees will be regarded as resources as long as they contribute to the company's core competencies and knowledge productivity. This perspective has a definite impact on the ability to learn on the educational system and on new social imbalances. The author explores the impact of the demand for knowledge productivity in education and learning in organizations. These perceptions and the concept of the corporate curriculum might stimulate for further action.

1. Introduction

In 1993, the average manpower at large corporations such as General Motors, Honeywell and BASF decreased by 5%, 6% and 8%, respectively. IBM, Digital and Kodak even cut their staff by 13%, 17% and 17%, respectively (Fortune, 1994). Statements like 'Our people are the firm's most important capital' contrast sharply with the growing numbers of 'human resources' presently collecting unemployment or disability benefits. If people were truly the most important capital, firms would not go to such great expense to get rid of them. Employees are no longer human resources by virtue of their existence as human beings. Efficiency drives like BPR might reveal that employees can play an important role as human resources when they prove to be valuable in the processes of knowledge creation and knowledge application. The tremendous importance of educational ventures for the employees that remain is overwhelmingly clear.

While the acquisition of relevant skills appears eminently reasonable, many obstacles impede the achievement of this goal. First, questions often surround the specific skills involved. As in discussions about meaningful qualifications arising from different types of vocational education, agreement is exceedingly difficult to reach concerning the desirable results of educational ventures in programs for corporate education. Many programs pursue very general goals, such as: 'managerial skills for middle management', 'improving insight into financial aspects of corporate management', 'introduction to information technology', 'customer-friendly conduct' and 'communication skills'. As a logical consequence of this inadequate description of skills, there is rarely any testing to evaluate the proficiency of participants with respect to the stated objectives or their improvement following the program. In a depressing but nevertheless predictable outcome, credible American estimates suggest that only 10% of educational ventures have a major impact on employee performance (Broad & Newstrom, 1992; Latham & Crandall, 1991).

The concept of employability, which is becoming increasingly relevant for permanent staff, implicitly holds workers accountable for remaining attractive to their employers in occupational respects. Individuals bear a growing responsibility for acquiring skills. More than ever, employees are expected to take charge of their own progress and development. In this context, self-marketing has become a core competence (Sattelberger, 1994).

2. When Human Resources stop being Resources

Perceptions of the role of human intervention in economic transactions have also changed. Appreciation of an individual's physical labor and ability to regulate and coordinate has made way for an emphasis on potential contribution to knowledge productivity. Of the products manufactured and services rendered by organizations, material items (such as commodities), capital and labor, are less significant than the combination of knowledge embodied in the product or service. Commodities, capital and physical labor required for medical drugs, software programs and genetically engineered tomatoes have a worth that pales in comparison to the value of the inherent knowledge. Mankind is surreptitiously abandoning the traditional economy of commodities, capital and labor in favor of a knowledge-based economy.

2.1 Knowledge productivity

Knowledge is crucial for continual improvements to existing products and services and for radically innovative measures. Organizational hierarchy will also reflect these changes. During the industrial revolution, the power resided with the masters of the most important means of production: the owners of the machines. Knowledge was stored in these machines. During the revolution in productivity, control shifted from the owner-shareholders to the managers, who applied this knowledge to labor. Today, knowledge workers are taking charge. These individuals possess the intellectual means of production: generating, transmitting and manipulating data, information and knowledge. The value of a product or service increases as knowledge is added. With respect to the new balance of power, which relies on knowledge productivity, Balasco and Stayer (1994) have introduced the concept of intellectual capitalism, which is exercised by knowledge workers. Line managers stimulate and create conditions conducive to cultivating the intellectual capital of employees. At present, various organizations are even investigating ways to express the economy of their knowledge in monetary terms on the balance of the annual accounts. This trend is yet another indication of the emergence of applied knowledge as the most important corporate resources (Stewart, 1994).

This trend might suggest the dawn of a golden era for human resources (the bearers of knowledge) and for education (the processes that produce knowledge). While this heyday may indeed be with us, it probably affects a select group. Like the former distinction between blue collar and white collar workers, Drucker (1993) differentiates service personnel from knowledge workers. While knowledge workers are the actual agents of economic productivity, service personnel enable knowledge workers to perform their knowledge work. To complement the concepts of blue collar and white collar workers, Kelley and Sadler (1985, 1994) have introduced gold collar workers: highly talented knowledge workers that serve as the sole scarce corporate resources in a knowledge-based economy. However, gold-collar workers can not do their work properly without sense-making interaction with the service people developing on-going their tacit knowledge.

The talents of knowledge workers are put to optimal use through material provisions and especially through an educational environment that furthers personal expertise. This climate enhances and stimulates participation by talented employees in interesting and useful projects and in professional and scholarly networks. Their surroundings encourage them to take initiatives and to develop an individual perspective within the opportunities of the organization's strategic policy.

The educational facilities primarily serve to nurture rare talent. Every knowledge worker whose achievements noticeably increase knowledge productivity will benefit more from these educational facilities. Service personnel will clearly be relegated to a secondary role in this process. The present dismal situation (in which poorly educated workers benefit less from educational facilities) is likely

to become more acute in the knowledge-based economy, where only a small share of the human resources are considered true resources.

Assigning work on the basis of core competencies also provides an opportunity to rectify the apparent subordination of service personnel with respect to knowledge workers. As soon as a group of service personnel becomes aware of its core competencies and independently cultivates and markets them, these individuals turn into knowledge workers. The next process should improve knowledge productivity that involves generating, disseminating and applying knowledge productively on the basis of their own core competencies and will serve as the new objective of educational facilities in organizations. This trend, which makes knowledge productivity the dominant added value, is irreversible. Nevertheless, the design and availability of the educational facilities provided should enable employees to acquire as many competencies as possible to retain their role in knowledge productivity. Research by Warmerdam and Van den Berg (1992) confirms the increasing importance of knowledge-based work. Simple, routine and low-level functions are diminishing, while complex high-level functions are increasing.

2.2 Educational programs in a knowledge economy

Thus, the traditional significance of education as a means to impart knowledge and to acquire skills has become secondary. Henceforth, educational programs at organizations shall emphasize learning as a means of improving internal knowledge productivity. This evolution is already in progress following the introduction of concepts such as 'the learning organization' (Serge, 1990; Swieringa & Wierdsma, 1990; Pedler, Burgoynge & Boydell, 1991) and 'the intelligent organization' (Pinchot & Pinchot, 1993; Quinn, 1992).

Quality movement projects require sweeping changes in the attitudes and skills of managers and employees. Learning organizations explore such attributes in detail. Characteristics of learning organizations, such as system thinking, learning in teams, focusing on problems and meta-learning have gone virtually unnoticed in formal programs for corporate education, despite their central role in management literature. Isolated training programs certainly appear to have fallen way behind current needs. On a more positive note, however, the artificial divider between learning and working is gradually making way for the virtual integration of both processes in a knowledge-based economy. Formal learning situations outside work will not disappear. Employees will continue to acquire cognitive, technical-instrumental and interactive skills in a safe learning environment with adequate learning materials and expert guidance. Nevertheless, their bond with their work in the sense of generating, disseminating and applying knowledge productively will become far stronger.

Employees are becoming increasingly responsible for initiating their own participation in formal educational programs as a result of the primary interest of knowledge workers in protecting and cultivating their intellectual capital, which is one of the factors of employability. Team learning at and around work is also becoming more formalized, as the course of operations corresponds more closely to a structure that resembles the learning cycles of Deming and Kolb. Reflecting on experiences as a means of acquiring new insights, assessing their practical usefulness and subsequently implementing them will be basic steps in every gradual modernization and radical innovation.

3. Work means Learning to Learn

Learning to learn is a competence of universal value and importance. Individuals need this special learning ability to remain abreast of constantly changing working conditions. This applies more than ever when knowledge productivity becomes the main economic drive. Permanent improvements and

innovations at and around work quickly depreciate expertise achieved upon completing a program for vocational education. The need for staff with broad and versatile abilities demands ongoing continuing education. Understanding that technological and other forms of knowledge quickly become obsolete highlights the importance of knowledge assets as well as the need to update knowledge. Dutch and American studies of skills that stimulate learning to learn indicate the essential nature of the following elements: understanding one's own style of learning, acquiring an awareness necessary for applying convergent, divergent, critical and intuitive processes of thought and becoming more skilled in organizing educational activities (Carnevale, Gainer & Meltzer, 1991; Van Terwisga & Van Sluijs, 1990). Subsequent elaboration of proficiency in learning to learn requires a conceptual basis that may be gleaned from educational psychology. Insights into meta-cognitions and self-regulation to support these learning processes are essential in cultivating the ability to learn (Boekaerts & Simons, 1993; Simons, 1993).

Learning processes occurring at and around the workplace are more powerful than learning processes embodied in formal training settings (Kessels, 1993). Such learning processes take place among staff members in the course of their work. They involve learning through utilizing occupational equipment and learning by staff and supervisors alike during interactions with clients. If the learning processes from formal curricula do not receive any form of support from the powerful learning processes in the course of daily operations, their effect will be minimal. Accordingly, the role of educational curricula will arouse far more interest in the event of a clearer relationship between learning processes in the training setting and at the workplace. The abundance of programs that resemble formal, classical, and school-type settings that are a far cry from the problems encountered by the trainees in their actual work on a daily basis has tarnished the reputation of training programs.

This situation may also explain the growing interest in various forms of on-the-job training. The shift toward workplace instruction has emphasized the educational function of supervisors, managers, close collaborators, and coaches (Jacobs & Jones, 1995; Rothwell & Kazanas, 1994). In addition, people are becoming increasingly aware that learning for knowledge work may be stimulated and supported through a variety of means other than formal training programs. Options include issuing special assignments, changing positions or seconding staff members, and actively participating in quality teams and discussion groups. Alternative possibilities entail organizing the work through project management and equipping the workplace with electronic performance support systems (Winslow & Bramer. 1994). Nevertheless, trainers have developed specific expertise that is very relevant to the work environment of knowledge workers. These important skills include conducting task-analysis research for valuable competencies, making tacit knowledge explicit, facilitating group work and team- building, and supplying mentors and coaches with appropriate guidance abilities. In a knowledge economy, attention to education may increase markedly if training programs are viewed as integrated plans for organizing learning rather than as
isolated courses.

3.1 Which characteristics of knowledge can be managed?

Despite the popularity of references to learning, intelligent, and even talented organizations, the feasibility of knowledge management is certainly questionable. The librarians of scholarly libraries are not knowledge managers, even though they administer all the wisdom recorded in the books.

The question about knowledge management resembles the literary problem where the novelist wonders whether he can create a protagonist smarter than himself. Knowledge productivity cannot be managed by means of purposeful planning, systematic arrangement, and control. Managers may be able to contribute to a favorable learning environment, to promote cooperation between the staff members, and to ensure the best possible equipment for the work environment. If the brain metaphor

is indeed useful for describing learning processes within an organization, and if connections between brain cells are likely to arise virtually at random and to be disconnected by the cells unless charged with useful information, then managing the actual processes of knowledge creation and knowledge application is hardly feasible. The quality of the information exchanged will mean more to knowledge workers than the role of the support manager. In many instances, the function of the manager (who does not personally contribute to the acquisition of knowledge) has been reduced to administrative regulation. Self-regulating teams and autonomous task forces have little need for managers who serve exclusively in a facilitating capacity. Facilitating is not the core of the actual leadership. This role belongs to the individual most adept at fostering attractive relationships within a network of people. The measure of such attraction depends heavily on a favorable balance between different types of knowledge. This quality involves subject matter expertise related to the specific work processes, the products, and the services occupying a group of staff members. It involves problem-solving skills that enable staff members to reach new, unconventional solutions on the basis of domain-specific expertise. It involves meta-cognitive skills that enable staff members to reflect on the manner in which they acquire existing knowledge, generate new knowledge, and apply these assets to improvements and innovations. It involves communication skills that provide staff members with access to the knowledge network of their colleagues and that allow them to participate in innovation processes. It involves regulative skills in the area of motivation and affections that help staff members acquire the discipline necessary to prevail over taxing circumstances and to persist where others quit. Perhaps the manager's function will become a relic of the twentieth century, when knowledge work was the exclusive domain of the management. Knowledge management in the sense of purposeful planning, systematically arranging, regulating, and controlling knowledge work may even prove obsolete because we are able to describe the process of knowledge creation and knowledge productivity only in the familiar terms of the dominant views on management. Views of knowledge management will denote only a period of transition to a new economic order in which the daily work environment is an authentic learning situation that highlights the role of the learner over that of the instructor.

4. The Corporate Curriculum

If learning is so essential for organizations, does a special plan for learning exist? The tremendous importance of learning power instigates the demand for a corporate curriculum.
The acknowledgment that firms operate in a knowledge economy assigns a strategic significance to knowledge productivity. The ability to add value to products and services through knowledge plays a central role. The development of core competencies is the crucial objective here and requires that firms acquire, create, disseminate, and apply knowledge to improve and innovate processes, products, and services. Given the vital importance of the learning processes involved, leaving the necessary learning to random opportunity would be imprudent. A systematic approach with a clear purpose therefore appears indicated. Nevertheless, the feasibility of managing such learning processes is questionable and is hardly possible in the manner in which we are accustomed to running other industrial processes. Ascertaining the knowledge required for developing competencies is far from simple. Even if you succeed, the necessary learning processes will not appear on command. The desire to manage and control learning processes is like trying to force somebody to learn.

Rather, the corporate curriculum should be viewed as a rich landscape where personnel and teams find their way and construct knowledge (The metaphor of learning as 'cries-crossing a rich landscape' is a favorite image of the constructivist approach). Self-regulation, which entails facilitating and stimulating development and organizing supportive feedback, are probably more suitable means for promoting knowledge productivity than mechanistic prescriptions of training content. Answering the

questions formulated above enables the description of several roles that the rich landscape of the corporate curriculum should fulfill. These functions primarily entail:

- acquiring subject matter expertise and skill directly related to the scope of the target competencies;
- learning to solve problems by using this domain specific expertise;
- developing reflective skills and meta-cognitions conducive to locating paths leading to new knowledge and means for acquiring and applying this asset;
- securing communication skills that provide access to the knowledge network of others and that enrich the learning climate within a workplace;
- procuring skills that regulate the motivation and affections related to learning;
- promoting peace and stability to enable specialization, cohesion, and integration;
- causing creative turmoil to instigate improvement and innovation.

The content of the corporate curriculum is probably of less importance than the development of the fundamental learning functions that have been described above.

An extensive repertoire of instructional strategies is available for carrying out these functions. Nevertheless, the corporate curriculum will need to subject classical educational instruments, such as training courses and workplace instruction, to critical evaluation of their usefulness with respect to the aforementioned learning functions. Numerous learning functions are best cultivated through introspection, mentoring and coaching, working on innovative assignments in project teams, searching for internal and external learning partners, establishing learning networks, performing bench mark research, strengthening the educational function of regular progress meetings, and conducting performance and appraisal reviews. Extensive discussions on a variety of unorthodox learning strategies designed for organizations appear in e.g. Walz & Bertels (1995). Applying assessment techniques and establishing development centers will help personnel understand the instructional objectives and the paths available for pursuing these goals. The corporate curriculum should inspire a dialogue on standards and values and on the articulation of tacit knowledge (Nonaka, 1991; Nonaka & Takeuchi, 1995).

A substantial risk exists that a central brain will systematically organize, plan, budget, and control all these instruments that promote learning. The principles of self-regulation, self-organization, and self-management, however, clearly indicate assigning individuals and teams greater responsibility for arranging their curricula. From the perspective of knowledge productivity, the various parties involved in a training program should embrace common views with respect to the objective or problem to be addressed. Planning a curriculum together that they deem useful for this purpose is more important than matching the activity to a central plan. Joint analysis of the educational need and identification of factors that inhibit learning at and around work are of greater value than obedient execution of an incidental training program from a catalogue.

The corporate curriculum will bear little resemblance to a formal blueprint; this resource has many manifestations, and a firm's entire personnel can benefit. The corporate curriculum is based on the central principle that learning is necessary for performing knowledge work, which is in turn a powerful form of learning. The corporate curriculum represents a firm's knowledge landscape. It progresses constantly, provided the firm cultivates this asset. The harvest depends largely on the prevailing learning climate. The quality of the corporate curriculum determines a firm's knowledge productivity and hence its success in a knowledge society.

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