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Tacit Knowledge: Revisiting the epistemology of knowledge
Lle savoir tacite : revisiter l'Épistémologie des savoirs

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See table of contents

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Article abstract

The concept of tacit knowledge encompasses all of the intricacy of the different experiences that people acquire over time, and which they utilize and bring to bear in carrying out tasks effectively, reacting to unforeseen circumstances, or innovating. The intuitive nature of tacit knowledge, its particular context, and the difficulty of expressing it in words call into question the very foundation of the notion of competency and its value in education. What parameters might be used to clarify tacit knowledge and its place within so-called "organizational" knowledge? Certain characteristics of tacit knowledge may contribute new considerations to the ongoing debate as to the true nature of competency.

TACIT KNOWLEDGE: REVISITING THE EPISTEMOLOGY OF KNOWLEDGE

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ABSTRACT. The concept of tacit knowledge encompasses all of the intricacy of the different experiences that people acquire over time, and which they utilize and bring to bear in carrying out tasks effectively, reacting to unforeseen circumstances, or innovating. The intuitive nature of tacit knowledge, its particular context, and the difficulty of expressing it in words call into question the very foundation of the notion of competency and its value in education. What parameters might be used to clarify tacit knowledge and its place within so-called "organizational" knowledge? Certain characteristics of tacit knowledge may contribute new considerations to the ongoing debate as to the true nature of competency.

LE SAVOIR TACITE: REVISITER L'ÉPISTÉMOLOGIE DES SAVOIRS

RÉSUMÉ. La notion de savoir tacite implique toute la richesse de l'expérience qu'une personne acquiert avec le temps, qu'elle mobilise et qu'elle met en œuvre dans le but d'accomplir efficacement une tâche, de réagir à des imprévus ou d'innover. Le caractère intuitif du savoir tacite, son contexte particulier et la difficulté à l'exprimer en mots interrogent les fondements mêmes de la notion de compétence et sa valeur pour l'éducation. Que seraient les paramètres pouvant nous aider à préciser le savoir tacite et sa place dans l'ensemble du savoir dit "organisationnel" ? Certaines caractéristiques du savoir tacite peuvent apporter de nouveaux éléments au présent débat quant à la véritable nature de la compétence.

FOREWORD

Experts who leave the workplace often take irreplaceable know-how with them, leading not only to an immediate loss of institutional knowledge but also to a host of subsequent ramifications. One need merely consider the sometimes enormous costs spent on training newcomers in work-specific knowledge (Ferrary, 1999). Sometimes, such consequences do not become apparent until long after the departure of the expert (Mayère 1995), especially in cases where the knowledge was held by a key figure or where no one else was even aware the knowledge existed (Régnier, 1995).

This same issue applies to the field of education. It is anticipated that an aging workforce and retirement-inducing policies will soon produce significant movement in this area and a resulting inestimable loss of expertise. This is all the more relevant in that expertise in this field tends to develop in isolation and individually (Hannum, 2001). The quality of teaching in schools, colleges and universities is contingent primarily on the experience of teachers and professors, experience that often manifests itself tacitly (Gerholm, 1990). And what about learners who learn chiefly through contact with tacit knowledge (Clewett, 1998)? Indeed, Gerholm states that student-teachers develop know-how tacitly as they socialize with seasoned teachers. So it is easy to appreciate the impacts of significant personnel movement on the quality of learning, since student-teachers encounter fewer role models from whom they can draw this tacit knowledge.

As one of the first and foremost sources of professionalization, educational institutions have the essential objective of preparing the next generation for the workplace. Increasingly, employers are taking an active part in academic curricula; the needs of employers often exceed specific academic requirements and call for a solid base of experience, i.e., a "practical sense" of the field or profession. Indeed, it is for this reason that internships, along with work-study programs and buddy systems, are more and more common. These training practices have the advantage of fostering the development of practical skills and conveying tacit knowledge in the work environment through real experience.

Tacit knowledge is therefore a significant consideration for teacher training and adult education. This article explores the nature of tacit knowledge and how its parameters can complement the notion of "competency."

INTRODUCTION

One cannot help but be amazed at the profusion of different viewpoints espoused by various authors in defining the concept of tacit knowledge. For example, various researchers have examined tacit knowledge in terms of practical intelligence (Sternberg, Wagner, Williams & Horvath, 1995), of having a "knack" (Albino, Garavelli & Schiuma, 2001; von Krogh, 1998), of implicit knowledge (Régnier, 1995; Reix, 1995), of informal competency (Durant, 2000; Ferrary, 1999), or of something along the lines of intuition (Brockmann & Simmonds, 1999; Leonard & Sensiper, 1998).

One notable explanation for this proliferation of definitions of tacit knowledge might be the fact that researchers often approach the question from different theoretical and/or practical angles, each highlighting certain aspects of knowledge that others have sometimes neglected. Take, for example, the areas of computer science, systems theory, or engineering, all of which revolve around formal aspects of knowledge; these fields focus primarily on cutting-

edge technology, especially artificial intelligence, to reproduce knowledge or to model human functions. Other disciplines as diverse as education, sociology and management tend to address more social aspects of knowledge; here, the emphasis is on understanding how knowledge develops and is transferred between individuals and among groups in the workplace.

But whatever the reigning theory among scholars, their definitions of tacit knowledge are often superficial, almost as if it were a "catch-all" category (Eraut, 2000) or a generic concept that encompassed all informal knowledge. While this perspective has the advantage of applying to a wide variety of situations, it does little to foster a more thorough investigation of the subject. Indeed, many studies, more specifically those in the field of knowledge management, do not distinguish between knowledge that can be – but that has not been – formalized, and knowledge that cannot be formalized. Moreover, little distinction is made between tacit knowledge as something an individual (or a group of individuals) possesses, a characteristic of knowledge itself (of its purpose), or a contextual phenomenon. This makes it extremely difficult to compare models of knowledge in organizational or educational settings.

A FEW EPISTEMOLOGY BASICS

The literature does show a definite consensus about the concepts of data, information and knowledge as very distinct from one another.

Data are conventional representations of fact, generally the result of observation or measurement – either qualitative or quantitative – of the environment. Data are devoid of intention, which is why they are considered to be objective (Prax, 2000). Information refers to data that have been organized in such a way as to hold meaning (Albino et al., 2001) or intention. While this makes information seem rather subjective, the meaning contained in information remains fixed and concrete, generally in written, oral or visual form (Prax, 2000). Hence, information can be accumulated in different ways: a symbol, a research paper, a skills framework, a book, a software application, a computerized database, a library, etc.

Knowledge refers to information that a person has assimilated and interpreted on different occasions (Durant, 2000). Knowledge is therefore a much more complex concept than information, precisely because it is intimately associated with the person who possesses it. Say, for example, that I consult a book on pedagogy. This gives me access to information. Reading the book allows me to acquire "knowledge" about pedagogy, and I would then be able to say that I have learned something about teaching. However, learning teaching methods "by heart" does not in itself constitute knowledge. To really speak of knowledge, I must first understand the information I have read and then give it a personalized meaning, otherwise what I have learned amounts only to "book learning."[1]

It is also generally accepted that knowledge is the essence of any skill that can be used to solve a problem (Leplat, 1990). If one transposes this notion into the workplace, one might say that information is transformed into knowledge when people understand, interpret, put into practice, and integrate information in their duties (Lee & Yang, 2000). A similar perspective suggests that knowledge consists of "programs" (routines) that people know how to execute and of determining principles of when and how to use them (Stinchcombe, 1990). From this standpoint, I could claim knowledge of pedagogy if I possess resources (knowledge of pedagogical concepts, principles, techniques, context, etc.) that allow me to realize a potential I have built from information about pedagogy. My knowledge would thus be the result of an accumulation of new information that helps to strengthen my previously acquired learning.

Some authors state that these circumstances are insufficient to describe knowledge; that it must also be based on its deliberate meaning, within a given context (Nokana, Toyama & Nagata, 2000), and insofar as it is socially accepted (von Krogh, Ichijo & Nonaka, 2000). In the absence of this social recognition, an individual can never possess more than information about any given subject. For people to be recognized as having knowledge, they must demonstrate abilities and prove themselves,[2] even if they appear to have sufficient "learning." Leading intervention models involving knowledge or competency are based on this idea of proving oneself.

It would be useful at this point to review the definitions of various types of knowledge in order to better recognize the parameters specific to tacit knowledge. There are two main approaches to categorizing knowledge that emerge from organizations: the "competency nomenclature" approach and the "knowledge as a resource to formalize" approach.

COMPETENCY NOMENCLATURE

Theories of work and organizations focus chiefly on the generic meaning of the word "competency," which is usually linked to performance in the workplace (Jonnaert, 2006). Authors disagree, however, when it comes to the precise nature of a competency: a learning objective, a specific task, a behaviour, a complex problem-solving system (knowledge, know-how, social skills), a collection of resources (individual and organizational), a potential, etc.

Regardless of the definition, the concept of competency is associated with notions of "ability" and "skill" in doing something (Zarifian, 2009, Le Boterf, 2001). The notion of "ability" is used to convey a competency that can be described using action verbs (ability to explain, to organize, to plan, to communicate, etc.). Skill, on the other hand, refers to a more qualitative dimension (efficiency) of the behaviours related to a given ability (Jonnaert, 2006). Competency thus consists of both what a person is required to carry out (a given ability) as well

as any specific talents[3] (skills, know-how) that the person could employ in the service of the organization (Alsène, Gamache & Lejeune, 2002).

Le Boterf (2002) defines competency in terms of know-how (or "knowing how") in work contexts characterized by repetition, routine and simple tasks, carrying out instructions, and strict regulations. However, in contexts of uncertainty, innovation or complexity, competency is defined more in terms of knowing how to *act* and *react*.[4] Le Boterf here points to another form of the practical model related to "empirical know-how" and "experiential knowledge" that refers to a kind of practical (or contingent) intelligence, with which people are able to size up a situation and unconsciously grasp the important information, even if initially they also employ action-based know-how acquired through experience and repetition. This concept is expressed well in familiar expressions such as "to have the hang of," "to have a knack for," "tricks of the trade," and "savvy" (Le Boterf, 2002).[5] Empirical know-how (or knowing how to act) would thus be difficult to express and formalize if it were vaguely referred to by Le Boterf as a kind of tacit knowledge.

The notion of competency thus refers to a classification of different types of knowledge[6] and as such provides an "ideal" (and necessary) model of work in an organization, with the objective being to evaluate how this model exists within the organization in order to maximize excellence, or to better manage it.

KNOWLEDGE AS A RESOURCE TO FORMALIZE

Given that one of the primary goals of knowledge management is to preserve knowledge within an organization (Lejeune, Gamache, Mbassegue & Alsène, 2001), the act of formalizing knowledge is a necessary and determining factor in achieving this goal. Indeed, specialists place great emphasis on the formalization of knowledge (Prax, 2000), and even more so on important phenomena such as organizational memory (Dieng et al., 2000) and organizational learning (Lawson & Lorenz, 1999).

Another classification of knowledge has hence developed around the idea of formalization, one that revolves around the concepts of explicit knowledge and tacit knowledge. This differentiation of knowledge stems from the work of Michael Polanyi (1966). Polanyi was the first person to use the term "tacit" to designate a form of knowledge that derives specifically from experience and intuition. In his book *The Tacit Dimension*, he states that a significant portion of a person's knowledge is tacit in nature, that is, difficult to translate into rational language, as opposed to knowledge that can be expressed by rational language. He adds that tacit knowledge refers more to the "art of knowing," while explicit knowledge can easily be translated into rational language. In speaking of tacit knowledge, Polanyi is referring to common physical abilities, such as swimming, and to more specific intellectual abilities, such as those

employed by a surgeon during a complex procedure, for example. To paraphrase Polanyi, experts always know more than they can tell (1966, p. 5).

While knowledge management specialists consider the tacit/explicit classification fundamental (see von Krogh et al., 2000; Dieng et al., 2000, Nonaka & Takeuchi, 1995; Prax, 2000; among others), they nevertheless often neglect essential properties of tacit knowledge, as originally defined by Polanyi. In fact, within organizations, the tacit/explicit classification is generally employed merely to distinguish informal knowledge from formal knowledge, which implies that non-formalized knowledge is necessarily tacit. Yet, as we will see, there are several forms of "informal" knowledge, including, in particular, different types of tacit knowledge.

Hence, a number of authors suggest grouping knowledge into three broad categories: formalized knowledge, "formalizable" knowledge, and tacit knowledge (Alsène et al., 2002; Gamache, Lejeune, et al., 2001; Boudreau, 1998; Reix, 1995; Nonaka & Takeuchi, 1995).

Formalized knowledge

From the perspective of knowledge management, formalized knowledge is that which has already been made explicit, "codified," or recorded. It may exist, for example, in a book, a report, a collective agreement, a posted regulation, course notes, as a piece of data, or as a symbol. It may also exist within computer systems such as the Internet, sound files, databases, bulletin boards, CD-ROMs, digital video files, or any other information-based application or media. It is something we want to preserve and disseminate, even in the absence of the person who formalized it (Reix, 1995). Insofar as the knowledge is formalized, one may suppose that it can be more easily transferred among people (Eraut, 2000; Brown & Duguid, 1998; Inkpen, 1996), either through reading, presentation, logical deduction (Lam, 2000) or through information and communications technology (Dieng et al., 2000).[7]

"Formalizable" knowledge

This is knowledge that, even if it can be, has not yet been formalized. This category can be further subdivided. There is *non-formalized* knowledge. For instance, in every organization there is knowledge that could be formalized either orally or through other media (texts, visual, audio) that has not yet been formalized. This information remains non-formalized not because it is tacit in nature but because the need to formalize it has not arisen within the organization.[8] There is also knowledge that has remained non-formalized because it is complex and difficult to define. Take *scientific knowledge*, for example, which may be interpreted through research but falls within the framework of a stringent and often lengthy scientific process, whether it be qualitative or quantitative. There is also *knowledge related to social context*, which can poten-

tially be made formal but for which attempts at formalization are resisted, and indeed which may go purposefully unexpressed by those who possess it (Bès, 1998). For example, one might prefer to hide knowledge to obtain, negotiate for and/or retain certain privileges – think of a specialist who does not want to formalize a part of his or her knowledge in order to maintain a position of power, or a privilege, within the organization. Beneficial knowledge may thus go unused for these reasons (Gerholm, 1990).

Another form of non-formalized knowledge related to social context concerns the values and social standards shared to a greater or lesser degree by members of a group (i.e., rules of conduct). Reix (1995) states that every group has its own version of this type of knowledge, and especially that part of it which goes unexpressed; this can sometimes lead to stereotypical or routine behaviours. Most knowledge related to social context can be formalized insofar as one can overcome the barriers occasionally created by certain organizational dynamics such as power trips and various alliances or strategies put in place by such "games" (Lejeune et al., 2001; Albino et al., 2001; Bès, 1998; Régnier, 1995). In cases where it appears that otherwise "formalizable" knowledge remains inaccessible, one can suppose that it is, by its very nature, "implicit," i.e., that it is not formally expressed but that it can be deduced or inferred (explicitly) based on various observations or thorough research.

Tacit (or "unformalizable") knowledge

Tacit knowledge, by its very essence, cannot be formalized; it cannot be explained using rational language. It is therefore nearly impossible to transfer it to another person except through methods such as observation, imitation, socialization, the use of metaphors (Gamache et al., 2001; Alsène et al., 2002; Nonaka, Toyama & Nagata, 2000; von Krogh et al., 2000), or by other training-related means such as internships, work-study programs, buddy systems, mentoring, and job rotation.

In short, one should bear in mind that tacit knowledge, among all types of knowledge, poses the greatest challenge with respect to formalization, whether it be in the field of competency management, which approaches tacit knowledge as practical or empirical know-how (knowing how to act) that only exists insofar as it can be evaluated (Prax, 2000), or in the field of knowledge management, which seeks only to appropriate tacit knowledge to make better use of the knowledge of those within the organization.

A CLARIFICATION CONCERNING THE CONCEPT OF TACIT KNOWLEDGE

In most dictionaries, the word "tacit" is defined along the lines of being that which is "unexpressed" or "understood" among several people without being explicitly stated. Often, such definitions also refer to the notion of "implicit-

ness", that is, the latent content of a proposition or fact as opposed to what is formally expressed.[9] This is a good illustration of the complex nature of tacit knowledge, which is often confused with implicit knowledge (see, for example: Eraut, 2000; Vincenti, 1990; Savoyant, 2008).

In practical terms, however, the sole common feature of these two concepts – tacit knowledge and implicit knowledge – is that neither one is formally expressed. But tacit knowledge is not simply knowledge that has not been formalized but that could potentially be made formal, such as, for example, social norms or that which is "unsaid" but rather implied. In fact, in competency management, we have seen that tacit knowledge is described as an "empirical know-how," or a "knowing how to act" when faced with change, constraints, or unforeseen events (Le Boterf, 2002). Such indefinable variables force people to act and react to the circumstances, to improvise, to use their imagination and intuition in short, to make use of tacit knowledge. No formalized knowledge will help make the related activity more effective. From this point, we can say that some of what is considered practical knowledge lies outside the scope of competency because, even if its results can be defined and observed to a relatively high degree, it remains too difficult to measure directly (i.e., during the action), simply because it is too difficult to put into words.[10]

Finally, it should be mentioned that not all practical knowledge can be explicit (for example in a skills framework), some being defined in a rather general manner and in terms of results (Alsène et al., 2002), other being ignored (Brown & Duguid, 1991)[11] or sometimes even being unknown to the company or educational institution.

However, highlighting certain properties makes it easier to grasp tacit knowledge in a general fashion.

Intuition

All researchers agree that tacit knowledge is closely linked to intuition (Albino et al., 2001; Eraut, 2000; Wong & Radcliffe, 2000; Brockmann & Simmonds, 1997; Leonard & Sensiper, 1998; Régnier, 1995). Like a sort of "flair" or special sensitivity, intuition is the referent according to which someone reacts without having an opportunity to rationally analyze the situation (Behling & Eckel, 1991). Baumard (1996) talks about the sensation of "déjà vu" as being a manifestation of tacit knowledge, in particular when someone finds him or herself surprised to know the solution to an unprecedented problem. One will recall Polanyi, who believed that as experts build experience in their fields, they also develop a personal and intuitive vision, which allows them to come up with solutions without always being able to rationally explain the process they used to find them. This phenomenon seems to manifest itself more specifically in corporate management. Indeed, the value of traditional decision-making models based on rational analysis has long been questioned

(Brockmann & Simmonds, 1997; Nonaka, 1994). It is suspected that intuition — to a much greater degree than reason — underpins organizational decision-making (Giunipero, Dawley & Anthony, 1999). This lays out a general range for intuition with respect, for example, to technical or technological problems faced by a machinery operator.

Context

Many authors in the field of knowledge management mention context as being an essential property of tacit knowledge. Eraut (2000) writes that a tacit reaction to the unforeseen is related to the context of the activity rather than to the task itself. For example, a task characterized by routine is frequently punctuated by short periods of adaptation to the task's changing circumstances; in this case, the tacit knowledge consists of perceiving the "details" of a change in work situation. When perception is at a rather "unconscious" level, people tend to focus their attention on the unusual aspects of the situation, based on which the knowledge is put into use (Valente & Luzi, 2000). Along the same lines, Bès (1998) states that the major hurdle inherent in acquiring and using knowledge (in the sense of knowledge management) rests in preserving the context in which the knowledge is developed: "For companies, knowledge is a special resource, because it is both inseparable from the company's activity, and hence from the context of the activity, and continually being renewed" (p.41).

It is to this context of activity that Lam (2000) is referring when he cites Barley (1996): "Embodied knowledge is also context specific; it is 'particular knowledge' which becomes relevant in practice only in the light of the problem at hand." It is also to this type of knowledge, which is generally non-transferable from one situation to another, that Hayek (cited in Myers, 1996) refers when he examines the question of knowledge that is not officially organized: "knowledge of the particular circumstances of time and place." In this way, tacit knowledge can help explain the limits of the competency-based approach, which is essentially based on formalization.

Regulation or control

Another fundamental characteristic of tacit knowledge, related to context, is that it is used primarily for the purposes of regulation in the workplace. Wong & Radcliffe (2000) speak of physical operations such as movement, coordination and specific skills that allow physical activities to occur. Other authors speak of routines during a particular task, when the person no longer has to think about the activity being carried out (Eraut, 2000). An example often given in the literature is riding a bicycle, which goes beyond the mere routine in extreme situations (see: Wong & Radcliffe, 2000; Eraut, 2000). In a traffic jam, for example, in addition to the basic routines that allow one to maintain one's balance and steer the bicycle, one must make a succession of reflexive

reactions and rapid, unconscious decisions (e.g., knowing exactly when and how to change lanes, etc.). Ferrary (1999) uses the term "micro-competencies of human regulation" to refer to this phenomenon, a term employed in the area of industrial control systems. These micro-competencies help maintain the operating balance of complex and structured industrial systems, despite environmental variations. Such know-how is indispensable (but impossible to automate) to the proper operation of automated facilities, with tacit knowledge being necessary to mitigate uncertainty or inadequacies in industrial processes (Wood, 1989). It is also this control function of tacit knowledge that serves an "informal" organizational memory (Girod, 1995). As such, there is even some concern that formalizing this type of knowledge would disturb the mutual adjustments of this same organizational memory (Baumard, 1996). Bear in mind that the control function of tacit knowledge consists of employing know-how in reaction to unforeseen circumstances without being able to clearly express how it works.

Experience

When examining how tacit knowledge is learned, reference is generally made to the fact that it is primarily acquired by doing an activity (Wong, 2000), or through direct experience (Ferrary, 1999). One might say that experimentation is the learning process employed by people wanting to tacitly "polish" their know-how. This, too, refers to expertise that a person develops through sustained repetition of an activity. In this sense, the time it takes to acquire experience acts as a sort of indicator of the degree to which tacit know-how is mastered: the years of practice, unique to each person, create a certain assumption as to how well the tacit knowledge is mastered (Wagner & Sternberg, 1985; Colonia-Willner, 1999; Wagner, 1987). For example, Brockmann & Simmonds (1997) believe that seniority in a company has the benefit of exposing employees (e.g., through transfers) to new and varied problems, along with entirely different and new solutions, which would explain how tacit knowledge is learned through experience.[12]

It is understood that talent is intuitively honed through experience. Over time, people refine their knowledge of how to act through chance discoveries, tips and tricks. At higher levels, they become very perceptive, i.e., able to grasp things that go unnoticed by the average person. The subject becomes expert, is acknowledged as such, and is therefore competent.

TOWARD A DEFINITION OF TACIT KNOWLEDGE

When knowledge management is used to examine knowledge in an organization, it generally refers to a distinction between explicit and tacit. We have seen, however, that it is much more practical to think of knowledge in an organizational setting in terms of the following distinctions: *formalized knowledge*

(i.e., information), *non-formalized knowledge* (but that can be formalized), and *tacit knowledge* (difficult and even impossible to formalize).

In addition, if one accepts that formalizing knowledge will always alter it in some way,[13] one might further the discussion by arguing that all formalizable know-how has a tacit dimension, that is, that knowledge is always made up of a part that is tacit and another that can be formalized (Leonard & Sensiper, 1998; Eraut, 2000). In this sense, that which is expressed formally never quite completely encompasses the issue; therefore that which is written, specified, codified, or formalized is simply information that is available when applying informal know-how. Hence, learning a tacit action in some way fills an undefined space left by formalized knowledge. This space refers to the context in which any knowledge is used in the complex workplace environment. But above all, one might say that, beyond its essentially intuitive nature, the primary characteristic of tacit knowledge, while being observable,[14] is that it remains difficult to put into words.

So we can now identify four main modes of expression of tacit knowledge. There is a basic cognitive mode, that is, applicable to decision making in the workplace. This mode of expression refers to what Mintzberg, Raisinghani and Théorêt (1976) describe as the "unstructured" decision process, as opposed to a logical approach to solving problems. Explicit knowledge is only a small part of what a person would normally use when making decisions in the workplace, since such decisions are more intuitive in nature.

A complex cognitive mode, found in solving multi-disciplinary problems such as those faced by scientists, is one of the more revealing forms of tacit knowledge (Mascitelli, 2000). Solving such problems relies on an ability to recognize interconnections between different fields of knowledge and to anticipate solutions without necessarily being conscious of the process (Giunipero et al., 1999). This is recognized as a particular quality of tacit knowledge.

Another mode of expression of tacit knowledge is related to the social relationships inherent in "social occupations" and, more specifically, to the process of influence that characterizes organizations. Consider leadership in the workplace, for example the "flair" of supervisors who have refined their approach to teamwork over many years. They have learned to assess a situation, know their employees, unconsciously grasp relevant information, and use their intuition in order to motivate their team.[15]

Finally, tacit knowledge may have a sensorial mode of expression, such as that of a master violin maker who uses a tuning fork to carefully select a particular tree that will provide the wood needed for his or her vision of the perfect instrument; or the fighter pilot who is able to maneuver in extreme flight conditions, reacting to the sensitivity of the instruments. Think also of the sense of smell of a perfumer who is able to differentiate the essences that

make up a perfume, or of the highly developed sense of taste of a chocolate maker, who can detect an imperfection in one of the ingredients in a chocolate truffle. Not to mention artisans in general.

It should also be stressed that tacit knowledge can encompass more than one of these modes at once.

CONCLUSION

One can conclude from this that tacit knowledge is a special high-level awareness of "how to act" that people develop over time and that they employ to solve practical problems at work and elsewhere. If one accepts that the notion of competency is central to education in the workplace, then tacit knowledge must call into question the basic tenets of teaching and training. Tacit knowledge cannot be taught. It is conveyed, in a normal environment, through observation, proximity, socialization, and "sharing of good practices." This particularity of tacit knowledge emphasizes the value of competency development methods that are relatively widespread in industrialized societies: the buddy system (or tutoring), mentoring, work-study programs, internships, and so forth.

Because the experience of tacit knowledge relies on close links between subjects and their environments, professionalization specialists see it as a missing link in competency: tacit knowledge refers to a personal, "non-formalizable," and even indefinable dimension of one's knowledge of how to act that is deeply rooted in the work setting. This will certainly fuel the current debate between proponents of conventional education based on competency and learning objectives and those who favour continuous or lifelong learning and the recognition of experience.

NOTES

1. i.e., information that I have integrated and organized but not experienced first hand.
2. Or become competent...
3. Which are translated primarily in terms of know-how and social skills.
4. Tardif (2006) is in agreement, stipulating that a competency is above all knowledge of how to act rather than merely know-how specified by the organization.
5. One need only think of people who are described as having a "green thumb."
6. Knowledge, know-how, social skills, etc.
7. And which can therefore be learned through a systematic process.
8. e.g., a procedure that might be integrated into a job description.
9. It is not immaterial that the word *tacit* comes from the Latin *tacitus*, from *tacere*, "to be silent" (Lejeune, 2005).
10. However, tacit knowledge (like any knowledge) is reproducible, as is, for example, any artistic production.
11. Which would confer an "implicit" character upon tacit knowledge.

12. This also fits with the idea that tacit knowledge is inherent to the context in which it is employed.
13. "To speak of something changes it" (Altheide & Johnson, 1994, p. 493).
14. Either indirectly, in terms of results, or directly, by observing an expert in order to pick up "tricks of the trade," which the observer then adapts in his or her own fashion.
15. One might even say that tacit knowledge is an important factor in the effect of a person's charisma on others.

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