

# Knowledge Management:

## Transforming workplace learning practices

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### **The primacy of knowledge**

Organizations in today's competitive and fast-paced world operate on knowledge. Drucker (1993) emphasizes that in a knowledge-intensive organization, "individuals are central. Knowledge is not impersonal, like money. Knowledge does not reside in a book, a databank, a software program; they contain only information. Knowledge is always embodied in a person; created, augmented, or improved by a person; carried by a person; applied by a person; taught and passed on by a person; used or misused by a person."

The ability of individuals to effectively use and contribute their knowledge requires continuous learning. As the new economy places a premium on the value of intellectual capital as opposed to physical and financial assets, learning provides a competitive edge. This paper explores the challenges of continuous learning and focuses on the potential of knowledge management as an alternative approach to supporting workplace learning.

## Limits to training

Given the importance of knowledge and learning, both for national and organizational competitiveness, it is not surprising that policy makers, academics and business leaders are jumping on the continuous learning bandwagon. However, at the same time, serious concerns are being raised about traditional training practices. In what should be heady days for those involved in the field of continuous learning, whether as internal training professionals, university continuing professional education practitioners or consultants involved in human resource development, there are growing concerns about whether prevailing practices are effective or sustainable. For example,

- Pfeffer and Sutton (1999) state that every year more than \$60 billion is spent on training by organizations and that much of this training is ineffective.
- Shaw (1995) argues that of the billions spent on formal employee training “as much as half of this gargantuan expenditure is being utterly wasted – squandered on training that’s unnecessary, training that is aimed at non-training problems, and training that is doomed to fail by poor design.”
- Schank (1997) states “companies’ learning systems are bankrupt. The way managers attempt to help people acquire knowledge and skills has absolutely nothing to do with the way people actually learn.”
- Finally, Nowlen describes traditional training activities as: dominated by the informational update. In what is typically an intensive two- or three-day short course, a single instructor lectures and lectures and lectures fairly large groups of business and professional people, who sit for long hours in an audiovisual twilight, making never-to-be-read notes at rows of narrow tables covered with green baize and appointed with fat binders and sweating pitchers of ice water (in Cervero, 1998).

What are the specific weaknesses in training activities that lead to such damning charges?

Before I begin, it is important to note that there are wide differences of quality in practice. Many professionals in the field are concerned with the quality of learning and are endeavouring to apply sound adult learning principles. Further, the training industry is highly competitive and innovative. New products, particularly computer-based technologies, continue to proliferate. However, impediments are often based as much on systemic challenges as they are on gaps in professional practice.

I suggest that the following challenges limit the effectiveness of traditional training.

### **Motivation**

Why do most people participate in work related training? Far too often it is because they are “told to”. The training activity is sponsored by the organization either to deal with defined topics or because of an identified gap (which may or may not be an actual skill deficiency) that has emerged as part of a performance review process.

However, research stresses the importance of intrinsic motivation; learning occurs when an adult is motivated to undertake learning to address a self-diagnosed need, which may address an immediate challenge or focus on long-term developmental needs. The ideal learning process allows the learner to exercise independence and choice. Present training practices, particularly within organizations, rarely offer either.

Similarly, we know that learning is enhanced through the provision of rich, timely, and usable feedback; yet far too often, traditional training activities do not provide this type of feedback and, often, attempts to do so are either inappropriate or ineffective.

## Experience

Research has consistently shown that adults learn by testing and building on their experience as they integrate new knowledge. Learning activities should allow adults to share, discuss and reflect on their experiences and the experiences of others. Yet far too many training activities pay lip service to the value of participant's experiences. Too often, training involves experts telling participants what they should know and do.

Experience impacts learning in another way. Often, we do not pay enough attention to the influence of experience and mental models as barriers to learning. Marchese (1998) notes that humans have an innate need to make meaning out of their experience. In doing so they create mental models and, once formed, mental models "tend to get pretty hard-wired into the brain and prove quite resistant to change. Once we think we've figured out some corner of the world, we tend to see what we want to see and hear what we want to hear, bending subsequent experience into confirmation."

Changing mental models is difficult; research has shown that traditional training is not very effective in allowing learners to adopt new mental models (Hake, 1999). Further, in Hake's study, even when instructors shifted to active forms of delivery, rich feedback environments and problem-based models, individuals were very resistant to adopting new knowledge.

This raises important questions about the nature of experience in learning and the design of learning activities for training. Not only do many training activities discount the value of learner experience, but static training also makes it unlikely that learners' mental models will change to incorporate new knowledge and perspectives.

## Surface versus deep learning

Traditionally, adult learning literature has distinguished between passive and active learning. Passive learning focuses on information transmission while active learning involves heightened engagement through activities such as discussion, problem solving, case analysis

or simulation. Marchese (1998) argues that passive learning is a misnomer. The idea of passivity focuses on how training is delivered. Learning, whether through listening to a lecture or reading an article – both commonly cited examples of passive learning – is not passive. If passive and active learning are flawed concepts, it may be more useful to consider the concept of surface and deep learning.

Surface learning occurs when a learner is superficially engaged with subject matter. For example, Marton and Saljo (1976) found that many learners focused on short-term memorization of facts, formulas and concepts, the classic image of “cramming for the exam”. This surface learning can be equated to the mind being on auto pilot, where a learner may even provide a correct answer but does not understand meaning (Langer, 1999). Deep learning involves an active engagement in which the learner seeks meaning, reflects on what is heard and read, and undertakes to create a richer understanding of key concepts. Consistent with the concept of double-loop learning (Argyris and Schön, 1996), deep learning enables learners to reframe mental models.

The implications of the concepts of surface and deep learning on training are important. Ramsden (1992) and Entwistle (1982) note that surface learning occurs in environments where learners have limited choice over what and how they learn, where the emphasis is on covering a great deal of subject matter and where anxiety, fear of failure and low self-esteem exist. Traditional training activities, which commonly emphasize content delivery and do not provide learner control or choice, encourage surface learning. Our understanding of deep learning is consistent with our knowledge of the importance of reflection in the learning process (Schön, 1987). Further, we now understand that the process of reflection requires time, skills and effort; however, training activities rarely allow for sufficient time for reflective activities.

## Proximity and Specificity

At one level, proximity involves the timing of training. The classic example, repeated in organization after organization, involves individuals being trained in a software application only to return to the workplace and find that the actual installation of the software will not occur until sometime in the distant future. Equally ineffective is the opposite situation, in which an individual uses new technology long before any formal training occurs. When training occurs, the learner is more advanced than the content, and often the instructor. While technical training provides one illustration of this proximity gap, similar problems exist in management training. For example, in one organization, managers were expected to be proficient in business planning techniques, but infrequently performed the task. Training in business planning proved ineffective because participants were not required to develop a business plan for at least a year after the training. In addition to causing the loss of key knowledge and skill over time, this violated one of the core principles of learning: the opportunity for relevant practice, feedback and follow-up support.

The issue of proximity exists on at least two other levels. The first involves the actual place of learning. Conventional training occurs in the classroom, often outside of the organizational setting. Shifting training activities outside of the workplace supports the pervasive, but incorrect, assumption that learning should be separated from work. Brown and Duguid (2000) note that there is still a common belief that learning should be isolated from the “distractions of work.” Separating work and training demonstrates a lack of understanding of the interrelationships between work, learning, knowledge and performance.

The second time and proximity problem involves the short-burst approach in which training events occur in short, intensive episodes. We have seen that the pressure to compress and shorten training activities is intensifying in order to limit the time of busy professionals away from the workplace. Yet research on learning

highlights the need for time for integration, reflection, challenge and testing. Compressing training time does not compress the learning cycle.

All of these issues are related to the issue of specificity. Effective learning must meet specific learner needs within an appropriate context. Present training practices simply do not respond to the need for learner specificity. In most situations, it is too time-consuming and expensive to fully customize training activities. As a result, training adopts the same approach as the formal educational system by focusing on theory and concepts while expecting the learner to make the transition between theory and practice.

To summarize, it is my contention that traditional training practices are often inherently flawed. They are limited, not by the good intentions of committed professionals and teachers, but by powerful factors that produce what Pfeffer and Sutton (2000) describe as a “knowing-doing gap”. Pfeffer and Sutton argue that, in many situations, the inability to change is not based on the absence of knowledge but the inability to implement what we know. Research on and practice of adult learning have provided a rich body of knowledge; yet far too often, what we know about effective learning does not translate into practice.

There are many reasons for this gap. Two may be useful for the purposes of this paper. I would suggest that dominant models of teaching, which we experience in our schools, colleges and universities, create mental models that are resistant to change. It is not the function of this paper to critique the pedagogy of formal education; suffice to say that much of what we experience in schools and post-secondary education is at odds with what we know about effective adult learning. Yet we are comfortable with what we have experienced and are very reluctant to embrace new approaches.

In addition, it is my sense that a contributing factor in the knowing-doing gap relates to the weak political position of most training and continuing education units, within both corporations and educational institutions. Typically, these units are marginalized and often unable to participate in strategic decision-making at the

highest levels of the organization. As a result, training initiatives are not strategically integrated. They are under-funded and seen to be of secondary importance. Worse, they are often after-thoughts or quick-fix solutions that hide the need for detailed analysis of structural or environmental problems. The inability of training units to deliver effective learning practices is compounded by the daunting challenge of measurement and return on investment demands in organizations obsessed with short-term financial results.

### **Innovation in workplace learning – sustaining technologies**

Yet it is erroneous to assume that the training industry is impervious to change or resistant to innovation. A recent investment analysis report (Bachman, 2000) suggests that corporate learning has recently emerged as one of the fastest-growing and promising marketplaces. Market opportunities, emerging out of the recognition of a need for effective learning in many firms, combined with developments in computer and telecommunications technologies, have spawned a phase of rapid innovation and development. Monthly, if not weekly, announcements of new technology-based learning companies have become the norm. At the same time, existing educational institutions, consulting firms, and private training providers are desperately working to incorporate the latest technologies in an effort to position themselves in this dynamic marketplace.

While we are seeing a wide range of product and service offerings, many of which enhance the quality and effectiveness of training practices, these developments can be characterized, using Christensen's (1997) concept of sustaining and disruptive technologies, as examples of sustaining technologies. Sustaining technologies focus on improving the performance of existing products in existing markets. Sustaining technologies are often effective but they serve present users and focus on incremental improvements.



While some observers argue that the technological innovations within the training industry have pushed the field further and faster than ever before, I suggest that, in far too many settings, technology-enabled training is still divorced from work and practice, learning does not build on experience, and the opportunity to experience, reflect and develop new mental models is not enhanced. The vast majority of technology-based products and services that have flooded the training marketplace can incrementally improve but still only maintain current models. The systemic and environmental challenges we face cannot be adequately addressed through sustaining innovations.

## **New directions— knowledge management as disruptive innovation**

Can we identify more effective approaches to workplace learning? How do we address the knowing-doing gap within existing training practices? Using Christensen's (1997) model, if sustaining innovations emphasize incremental improvements in an existing marketplace, other kinds of innovations, "disruptive" ones, "create an entirely new market through the introduction of a new kind of product or service" (Christensen and Overdorf, 2000, p. 72). Disruptive innovations are not incremental improvements; rather they are transformations that redefine products and services and, also, customers, markets and business models.

I suggest that the emergence of knowledge management serves as a disruptive innovation that can transform workplace learning practices. From my perspective, knowledge management initiatives support learning in ways that are more effective, as well as consistent, with emerging learning theories than are existing formal training models.

However, I make this claim with a degree of trepidation. The field of knowledge management is not without its critics. Some dismiss knowledge management as a fad; however, most observers are more optimistic. While still in its infancy, knowledge

management has already undergone several transformations, moving from emphasizing technology-based solutions to approaches that incorporate a richer understanding of the complex interplay between individuals, knowledge, work and technology. As a result, my proposal – that knowledge management serves as a disruptive innovation in the area of continuous learning – is not based on a static view of the field or an adherence to existing models but to a more fluid and emergent understanding of this area.

### **Understanding the essence of knowledge management**

It is useful to provide an overview of knowledge management before examining the potential of knowledge management to transform workplace learning.

First, a definition: knowledge management is commonly described as a systematic process for knowledge generation, codification and coordination, and transfer and dissemination within organization. While this definition appears intuitive and appealing, it also raises important questions.

Brown and Duguid (2000) suggest that knowledge management emerged as business process reengineering (BPR) stumbled. The process orientation, featured in BPR, proved too limiting when applied to complex, knowledge-intensive work. Further, the focus on processes and transactions tended to ignore the reality of actual work practices. However, as knowledge management emerged in an attempt to support complex and knowledge-intensive work practices, many early knowledge management projects still emphasized a process orientation by attempting to identify, collect, store and disseminate knowledge transactions. Davenport (1999) notes that, initially, most firms attempted to manage knowledge as an asset, using the same approaches, such as capturing, storing, counting, applying and controlling, that they had historically applied to manage physical assets.

As well, BPR initiatives tended to emphasize technology. While BPR has been eclipsed, the technology orientation embedded in BPR continued in knowledge management. However, as we have learned, often through implementation failures, technology is not a panacea for

dealing with complex issues. As a result, we have seen a move away from technology-centric knowledge management approaches. We are beginning to understand that successful knowledge management initiatives must accommodate complex and interrelated factors involving organizational culture, systems, processes, human factors, and technology.

### Understanding the “knowledge” in knowledge management

Increasingly, knowledge management practitioners are confronting the complex nature of knowledge. Early knowledge management efforts were based on simplistic approaches to knowledge, yet we are realizing that our characterizations of knowledge do not adequately represent its complexity. Traditional approaches, which view knowledge as comprising universally-held beliefs and individual representations of truth, are unrealistic. Many researchers, such as Blackler (1995), see knowledge as being continuously constructed and transformed through our experience and interactions. Blackler suggests that rather than emphasizing the end product “knowledge”, it is more useful to consider the process of knowing.

Blackler (1995) views the process of knowing as being mediated, situated, provisional, pragmatic, and contested:

- *Mediated* as we continually engage in an ongoing process of negotiation between what we know and the new stimuli we face.
- *Situated* through the interaction of what we know and experience through a process of practice and reflection.
- *Provisional* as the result of a process of continuous construction, in which we never attain complete knowledge or mastery.
- *Pragmatic* because our motivation to know occurs in response to basic needs.
- *Contested* as we understand that knowing is at least in part a social activity – knowing occurs through dialogue and interaction; sometimes our understandings are at odds with or are challenged by others.

Acknowledging the danger of having this paper shift to a discussion of an age-old epistemological debate, it is useful to focus these comments about the nature of knowledge again on knowledge management.

Our understanding of knowledge drives our approach to knowledge management. If we view knowledge as being comprised of formalized, universal truths, it is productive to attempt to capture, store and disseminate these valuable gems of knowledge. If we can share these gems, we begin to leverage knowledge and add value. Hansen, Nohria and Tierney (1999) characterize this approach to knowledge management as a codification strategy, in which value is created when the organization systematically captures, organizes and stores explicit knowledge using techniques such as repositories, data warehousing and data mining.

Often, reality is much more complex. Many researchers point out that knowledge includes both explicit and tacit dimensions. Nonaka et al (1995) suggest that knowledge generation and sharing involves a complex interrelationship between tacit and explicit knowledge. In brief, explicit knowledge can easily be shared (for example, in the form of reports, stories, documents or visual images). As we receive explicit knowledge, we test it against our own experience, intuition and tacit understanding of the world. In doing so, we integrate external explicit knowledge into our own knowledge pool; our tacit knowledge grows. However, in order to share our knowledge, which is still internalized and tacit, we must make it explicit. It is very hard to synthesize and share tacit knowledge; all that we know can never be fully shared. It is possible to share tacit knowledge; as we tell stories, communicate with metaphors, and build models and prototypes, we shift at least some of our tacit knowledge into explicit forms that can be communicated to others. As others receive our explicit knowledge, they go through a similar sequence, moving from explicit to tacit and back to explicit.

Tacit knowledge presents challenges for knowledge management. It is clear that the experience, intuition and expertise that lies in the heads of individuals is valuable; yet codification

strategies, one of the most common approaches to knowledge management, focus on the capture of explicit knowledge. The process of making tacit knowledge explicit is difficult, time consuming and, also, incomplete. Some would suggest that we never fully capture tacit knowledge. To create knowledge management models which support the creation and sharing of tacit knowledge we must move beyond codification approaches and emphasize communications and interaction.

At present, it appears that most knowledge management models adopt either a codification strategy or a personalization strategy (Hansen, Nohria and Tierney, 1999). While some organizations attempt to develop systems that feature both approaches, this has proven to be difficult. Finally, we are seeing a third type of knowledge management model emerge. It is harder to classify these initiatives, and some would suggest they do not fall under a narrow definition of knowledge management. These emerging models focus on the process of knowing, which, we suggested earlier, involves an active process that is mediated, situated, provisional, pragmatic and contested. In this context, knowledge management initiatives must emphasize systems of interaction through which people create and share what they know, and must focus on finding ways to support such systems in an organization. Knowing becomes a highly fluid and transitional process. The emphasis is on the various ways in which knowledge can be applied. Knowledge management, if that is the appropriate term, evolves from emphasizing the generation, codification, and dissemination of knowledge to a richer and more integrated focus on knowledge-based outcomes. For example, Pfeffer and Sutton (2000) examine the need to address gaps in existing knowledge and application. In addition, the rapidly growing popularity of the concept of communities of practice may reflect new developments in knowledge management (Wenger, 1998; Wenger and Synder, 2000).

## Emerging knowledge management trends

As the field matures, several other trends can be identified. I believe we are seeing the convergence of strategy and knowledge management (see Hansen, Nohria and Tierney, (1999) and Donoghue, Harris, and Weitzman (1999)). Increasingly, organizations are consciously integrating overarching strategies and knowledge practices. For example:

- The World Bank, as it endeavours to become a knowledge bank for international development, has recognized the need for widely dispersed professionals in specialized fields to engage in ongoing dialogue and discussions and has created mechanisms to support existing global communities of practice.
- Ernst and Young, in an attempt to leverage knowledge gained from past consulting engagements in order to reuse knowledge, applied a codified approach. Using extensive networks and groupware technology, Ernst and Young developed electronic document systems to codify, store, synthesize and disseminate knowledge.
- British Petroleum recognized that employees, often located in isolated sites, regularly face complex problems and determined that the ability to solve problems in a timely manner was critical. Thus BP began to link experts who possess experience and knowledge – much of it tacit – with people who need to solve problems. The British Petroleum knowledge management system focuses on communications, linking people together with the aid of multimedia technologies to enable them to discuss, analyze and solve problems.

Davenport (1999) believes that as knowledge management becomes a permanent feature in organizations, we are seeing a heightened recognition of the importance of the human-knowledge relationship. Effective knowledge management must be fully integrated into work practice. This challenge involves careful work redesign and a transformation in managerial practices, all implemented using effective change management techniques.

This paper cannot present a complete and comprehensive examination of knowledge management, but before we shift to examining the possibility of knowledge management as a disruptive innovation, using Christensen's (1997) distinction between sustaining and disruptive innovations, it is useful to provide some concluding comments.

We are still in early stages, but knowledge management is moving beyond the early hype and emphasis on technology solutions. There is a growing awareness of the importance of understanding the complexity of knowledge in organizations. Some approaches emphasize codified strategies in response to the need to capture explicit knowledge, while others focus on addressing the challenge of sharing tacit knowledge. Several models reflect emerging views of the process of knowing and work to find ways to support individuals and groups as they construct, share and apply knowledge. The good news is that knowledge management appears to be evolving and maturing. Increasingly, knowledge management practices are integrated with organizational strategy. We are learning how to handle complex change management processes necessary to introduce knowledge management initiatives.

### **Making the argument – knowledge management transforming workplace learning practices**

How can knowledge management serve as a disruptive innovation, capable of transforming our existing training models?

Before we address this challenge, it is worth noting that critics of prevailing training practices have already developed alternative models. For example, learning approaches such as action learning, apprenticeship, and situated learning represent useful options to traditional training practices.

Action learning involves a process in which a facilitator guides a workgroup through the resolution of an actual problem or issue while simultaneously engaging members to consider processes and reflect on their actions and learning. Apprenticeship models link

new learners with senior, experienced experts. Apprenticeship practices have a long and rich historical tradition. While classic master-apprentice practices may not be as common today, other variations on this theme have emerged. Situated learning focuses on learning in the workplace, either through structured or unstructured activities. Situated learning practices range from communities of practice to just-in-time training, perhaps using technology on the desktop or on the shop floor.

As the reader considers these, and other, alternatives to traditional training practices, it is useful to reflect on Blackler's view of the process of knowing discussed earlier in this paper. These approaches build on learner's experience (mediated) and they emphasize real problems in the workplace (pragmatic, situated). They adopt a constructivist view of learning (provisional) in which learning is a continuous process. Finally, alternatives to traditional training practices address key social dimensions of learning (contested). Using Blackler's model, learning and knowing are highly interrelated, if not synonymous. Brown and Duguid (2000) hold the view that the two are indivisible and suggest that:

[L]earning, the acquisition of knowledge, presents knowledge management with its central challenge. The defense of intellectual property, the sowing and harvesting of information, the exploitation of intellectual capital, and the benchmarking of competitors' intellectual assets are all important parts of the knowledge management game. But all of these are subordinate to the matter of learning. For it is learning that makes intellectual property, capital, and assets, usable.

Brown and Gray (1998) suggest that "learning is about work, work is about learning, and both are social.... Learning is less about absorbing information than it is about becoming part of a community. It is a social process built around informed participants: people need information to do their work, but it is only through working that they get the information they need."



Thus, knowledge management, initially designed to support various work processes such as decision-making, planning and research, is also ideally suited to serve as a powerful learning support tool. Knowledge management allows and encourages the integration of work and learning.

## **Workplace learning within knowledge management**

If we examine a common example of knowledge management, we can see the links between work and learning. In our example, we have a knowledge management system that provides individuals with access to various knowledge repositories containing internal and external material. Our system incorporates processes to synthesize internal knowledge, thus enabling experts to contribute value-added contextual knowledge. Also, our knowledge management system provides users with just-in-time support, at the desktop, to assist in problem solving and decision-making. Dialogue and conferencing systems allow participants to engage in discussion. Finally, the culture supports knowledge management through visible senior management support and investment as well as rewards and incentives for knowledge sharing.

How does this system support learning?

Obviously, learning shifts from formal training to a process that is continuous and informal. The learner engages the knowledge management system in a way that is appropriate to his/her needs. For example, for a learner needing to access a recent report on an industry, external explicit knowledge repositories provide the raw material required to aid decision making and, also, increase the learner's knowledge – to learn – about that industry. For more complex challenges, the learner may choose to discuss issues with an expert or to participate in more extended dialogue with fellow professionals. In this context, learning is both individual and social; through social interactions, such as communities of practice, rich feedback and reinforcement features are supported.

In my earlier knowledge management section, I identified several different types of knowledge management initiatives. I would suggest that codified knowledge management initiatives support learning at a more basic level. Codified knowledge bases provide access to static knowledge and serve as an electronic research library. Knowledge management systems that encourage communication and dialogue support the exchange of more contextual and complex tacit knowledge. I believe that the most significant potential for knowledge management to support learning will occur through emerging knowledge management approaches. There is a great deal of excitement around the role of communities of practice to serve as powerful learning support systems. As well, organizations that are integrating knowledge management practices into value-chain activities, research and innovation efforts and leveraging existing internal knowledge can create dynamic workplace learning environments.

In all of these cases, knowledge management supports learning that is applied and situated. Far from being episodic, learning is a natural part of work. Learners exhibit an innate desire to learn, know, excel and belong. Learners have access to different forms of knowledge ranging from explicit knowledge, such as those available in knowledge repositories, to tacit knowledge, gained through dialogue and interaction with fellow professionals. This type of learning is predicated upon the belief that learners are intrinsically motivated and have valuable experiences with which they build new knowledge. It is also based on a view that learners know how to learn, that they have the ability to engage in reflection and possess intellectual maturity to work through complex and dynamic learning processes.

## What does this mean for continuing professional education practitioners?

The simple answer to this question is: “It depends.” I believe that three key implications must be considered.

First, I believe that, for the most part, continuing professional educators have ignored nonformal learning in the workplace. We all know that it exists but focus most of our attention on training efforts. So it is not too great a reach to suggest that, as knowledge management initiatives become more prevalent in organizations, workers will naturally use knowledge management systems to support their work and their nonformal learning. In the same way that the corporate library, the Internet and informal discussions at the water cooler or coffee table provide knowledge and learning opportunities, so too will knowledge management systems. Pfeffer and Sutton (2000) echo the conclusions of many other researchers, noting: “[M]ost of the knowledge that is used and useful is transferred by the stories people tell to each other, by the trials and errors that occur as people develop knowledge and skill, by inexperienced people watching those more experienced, and by experienced people providing close and constant coaching to newcomers.” Knowledge management systems will provide one more means to support knowledge creation and transfer.

However, it would be disappointing if continuing education professionals continued to abdicate any sort of a leadership role.

Second, the potential of knowledge management to serve as a disruptive innovation is limited by our adherence to existing practices. Even when the flaws of training are acknowledged, it is safe to assume that formal training will not disappear in the near future. Sustaining practices are too entrenched to suggest that dramatic changes will occur any time soon. Existing training models fit with our existing mental models of how learning should occur. While we are aware of the gaps between knowing and doing, awareness will not necessarily lead to more effective practice.

The good news is that the rapid pace of innovation in the training industry is moving the field forward. New approaches,

particularly technology-related products, are beginning to incorporate limited knowledge management-type features. For example, it is becoming more common for training to include post-training discussion conferences and feedback, practice and implementation activities. I believe that a slow process of integration is occurring. The challenge is the degree of integration and the pace of change. Do we have time for an evolutionary model of innovation when we are facing such strong demands to improve workplace learning practices?

Third, if we are looking for a transformation of workplace learning practices and believe that knowledge management has the potential to serve as a disruptive innovation, it is necessary to completely rethink our response to this opportunity. As Christensen notes, disruptive innovations are not attractive in existing markets. Disruptive innovations are not incremental changes that are easily integrated into existing practices.

Knowledge management, when considered as a disruptive technology, will not succeed within existing practices. New models and approaches are required. One option might involve creating new research units, outside of, or at the very least in parallel with, traditional structures, to engage in active research and scholarship to advance our understanding of the field. These research units could provide leadership and serve as a focal point as we design and test new learning practices based on knowledge management models.

If sustaining training practices are too entrenched within traditional organizations and in traditional sectors, it may be valuable to extend our horizons. For example, the new media industry thrives in a chaotic environment; change and ambiguity are the norm. Professionals in this industry are faced with the need to engage in even more continuous learning than other sectors. Further, many of these knowledge-workers are “free agents”, engaged in contractual project work in small firms, where they may not have access to traditional forms of learning support. This is an environment that may be open to transformations in workplace learning and, as a result, this sector may be much more willing to exploring creative knowledge management models that support learning.

In summary, I believe that knowledge management presents continuing professional educators with a unique opportunity. We have the ability to explore new innovations in a rapidly developing new field created by converging forces including changing technologies, new approaches and models of learning and emerging understandings of how knowledge can be applied in organizations. We have the ability to redefine our craft and practices in an effort provide leadership and to be more responsive to learner needs. Exciting times!

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