The future of eLearning

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Abstract

Corporate CEOs are finally telling the truth when they say "People are our most important assets". Intellectual capital has become the primary factor of production. To raise their "corporate IQ", managers treat workers as if they were customers of learning. This article explores why people learn much more about their jobs in the coffee room than in the classroom. It hypothesizes that equipping people intellectually to prosper will become a corporate discipline every bit as important as marketing or finance. Web services will mark the advent of workflow learning in real-time organizations.

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Change is rampant, and learning is the only way to keep up. Intellectual capital is the primary factor of production of wealth. In the knowledge economy we are in, only the smartest will survive, the ones with the highest Corporate IQ. And education and learning, unlike the fixed IQ they tell us we're born with, is the only way we know how to raise that IQ level. When today's executives say "People are our most important asset", they are finally speaking the truth. Are they hearing what they are saying? Has the implication, long-term and short, been factored into the balance sheet?

Who's going to nurture this most important asset? The training department? C'mon. eLearning may be an outgrowth of the training department, but training is a staff function with a weak reputation. Nobody else calls them trainees. Or even learners. They are *workers* and their education is too important to delegate to trainers any longer.

No one knows what we'll call it, but learning is about to become the new management function. A brilliant friend of mine, David Grebow, recently spoke to a gathering of Boeing CIO's. He told them that, at the end of the hour during which he was talking, he would change the focus of their job descriptions. He did. It moved from managing the IT assets and resources of the company to making sure the brains walking in Monday morning and out Friday evening had the tools they needed to be as smart as possible. The basic reason was simple: to help create a smarter company with a higher corporate IQ.

Recent research finds that firms that invest in the development of their people have significantly higher returns over the long term. Three portfolios of companies that spend aggressively on employee development have outperformed the S&P 500, each returning in excess of 30 percent in 2003 (Bassi and McMurrer, 2004).

Consultants will invent a new set of buzzwords to sidestep the tarnish of schooling. Readiness? Responsiveness? Flexible strength? Whatever it's named, it will be more important than IT, marketing, or finance.

Intangibles have become more important than tangibles, yet our ancient accounting principles and GAAP rules still value such things as knowledge, skills, and emotional intelligence at zero. Employees, rather than being human capital and an asset are still carried as a liability and expense. It's obvious what's wrong with this picture. Business cries out for a new yardstick.

"Education often preaches instead of teaches", says author Marcia Conner, former education director at Microsoft and PeopleSoft. "Instead of learning solutions to yesterday's problems, people need to learn how to deal with the unknown. In the

On the Horizon
Volume 12 · Number 4 · 2004 · 150-156

real world, the issues we face are ones that no one knows the answers to. Can we afford not to learn how to learn and find more and better ways to learn everything we will need to do in the days and years to come?"

Informal learning

No matter what the support system, workers who create the most value are those who know the right people, the right stuff, and the right things to do. It's all a matter of learning, but it's not the sort of learning that is the province of training departments, workshops, and classrooms. The old joke is "See that women in that office. She's the smartest person in the company. Know who is the next smartest? That guy sitting in the office next to her". It happens to be true.

Workers already learn more in the break room than in the classroom. People discover how to do their jobs through informal learning – observing others, asking the person in the next cubicle, calling the help desk, trial-and-error, meeting and talking at the proverbial water cooler, and simply working with people in the know. Formal learning-classes and workshops and online events – as the research shows, is the source of only 5 percent to 20 percent of what people learn at work.

Informal learning is effective because it is personal and relevant. The learner is responsible. It's real. How different from formal learning, which is imposed by someone else. Formal learning is pushed at workers; workers are drawn to informal learning.

Absurdly, organizations invest most of their training budgets in formal learning. This stands common sense on its head: Invest your resources where they'll have the least impact. Instead of taking advantage of the 80/20 rule, trainers seem hell-bent on following the 20/80 rule.

Think about how a go-getter knowledge worker learns something new. The worker checks Google to get a framework of what's to be learned and dives right in, experimenting, building on knowledge of similar subjects, and asking people in the office who've been there. The goal is not to master a subject or pass a test; it's to find out enough to get the immediate job done. The worker doesn't take off for a weeklong workshop; more likely, she picks up bits and pieces day-by-day for months.

This is self-directed learning, and that's yet another reason it escapes notice. No one is responsible for toting up the informal learning workers engage in. There are no promotions or Vice President positions attached. No one gets the credit for increasing the corporate IQ.

Many learners today are not self-directed; they are waiting for directions. It's time to tell them that the rules have changed. It's in their self-interest to become proactive learning opportunists.

Their reluctance is hardly surprising. Most training is built on the pessimistic assumption that the trainees are deficient. Training's job is fixing what's broken rather than making what's good better. We got that idea from the formal school system, which is also broken. Consequences include:

- ineffective negative reinforcement (correct what's wrong, take the test, do this or else);
- unmotivated learners (who wants to accept that they are inadequate?);
- learner disengagement, unrewarded curiosity, spurned creativity (because the faculty implies "My way or the highway");
- training (we do it to you) instead of learning (co-creation of knowledge); and
- focus on fixing the individual rather than optimizing the team (because the individual trainee will submit to being fixed but the organization is reluctant to join in group therapy).

If three-quarters of learning in corporations is informal, we can hardly leave it to chance, but what can one do? The majority of executives aren't going to shell out for afternoon tea breaks, non-directed employee time, or informal conference rooms without taking on a new way of looking at the world.

Digital natives

In February 2004, I took part in the eLearnInternational Conference in Edinburgh. This was a conference with a difference: the delegates focused on four potential scenarios for the future of learning ten years out.

To connect past and future, our first speaker was a professor of moral philosophy whose chair dated back more than 500 years. Unwittingly, he exemplified why the traditional academic model is dying. Can one really expect to receive a quality learning experience via computer? After all, his own attempts to put his material into a learning management system had failed. Did we appreciate that learning is more than serving up content? This erudite fellow was talking through his hat, so wedded to the way things were done on campus that he could only see eLearning as an inferior version of the real stuff that had stood the test of time.

Remember the scene in the Woody Allen film where a pompous Columbia professor is trying to

On the Horizon
Volume 12 · Number 4 · 2004 · 150-156

impress his date with his interpretation of the work of Marshal McLuhan? From behind a poster, Woody pulls out Marshal McLuhan himself, who tells the professor, "You know nothing of my work. . ."

Don Clark, the CEO of the largest eLearning firm in the UK, provided just such a moment with his common-sense, crystal-clear description of the future of learning. If we lived in a world with no schools, what would we build in their place? Would we rebuild rural, medieval colleges? Don showed photographs of his twin boys learning. These "digital natives" are autonomous learners. They learn from the Internet. With frameworks obtained from computer games, they ask their father about military strategy. Imagine, ten-year-olds talking strategy. The twins do not have the patience to abide with the stand-and-talk model of teaching. Lecture is such an ineffective medium for learning.

What is a university, anyway? The Internet offers more information resources than any university library. The faculty comes and goes. The students are booted out where their time is up. What remains? In this age of digital abundance, the university is no more than a brand.

Learning has been a form of punishment, and it's time to end schooling's 2,000 years of slavery. Huzzah! That gave us plenty to talk about among ourselves during the ensuing coffee break. Most people went easier on the professor than I. I found no one who disagreed with Don.

Is there hope for those of us who did not grow up amid computers and networks? Yes, but we'll have to rip our blinders off and we need to develop our skills. If Olympic athletes approached their sports the way most knowledge workers approach learning, they'd never practice before entering the stadium.

Learning is a skill, not a hard-wired trait. People can beef up their capacity to learn at any age. You can learn about your learning style and strengths so that you can match what you learn to the format that works best for you, get a coach who intervenes when you've taken yourself off track, or simply learn about how adults learn so that you can ask "How does this relate?" and "Where can I learn more?"

Learning and life

The next afternoon, Etienne Wenger gave an inspiring talk about how badly we've understood how professionals learn (Etienne is a social learning theorist, best known for popularizing communities of practice).

The earliest communities of practice may have been cavemen sitting around a fire talking about the best way to hunt bears. That's the way "communities" work: practitioners come together to share, nurture, and validate tricks of the trade. Apprentices have always done this. Sometimes we mistakenly thought most of the learning was going on between master and apprentice. In fact, most apprentices probably learn more from one another.

Question: What does a flower know about being a flower? And what does a computer know about being a flower? Stumped? That's because neither flowers nor computers are members of the human community, and it's community that harbors knowledge.

A friend of Etienne is a wine professional. Describing a wine, the friend said it was "purple in the nose". This meant absolutely nothing to Etienne, because he is not a member of the wine-tasting community.

Imagine the friend is at a wine tasting with his colleagues. He discerns a new element and describes it as a convergence of fire and gravity. If others in the group buy in, the fire and gravity meme is legitimized. Here we have the two primary aspects in any community: participation and reification.

While the word community has a warm and fuzzy feel to it, the concept is value-neutral. These groups can impede progress, engage in group think, or neglect their responsibilities to the larger organization.

Now let's think about how eLearning might be a transformative force. Learning in a community involves answering four questions:

(1) *Identity*. Who are we becoming?
(2) *Meaning*. What is our experience?
(3) *Practice*. What are we doing?
(4) *Community*. Where do we belong?

In school or workshops, the learning relationship is vertical: there's a provider on top and a recipient. In a community of practice, peers learn from one another. Side-by-side and peer-to-peer replace top-down relationships.

First generation knowledge management failed because it was top down. Identify the critical knowledge and stuff it in a content management system. Nobody took ownership because no community embodied the knowledge. Now that we appreciate that knowledge lives in communities, we can facilitate KM by nurturing their development. As Pasteur said, "Chance favors those who are prepared".

Etienne suggests scrapping our industrial model of training and the notions that go with it. Learning will become an internal part of life itself. Teaching will fade in importance. Progress along a trajectory of development will replace skills training.

On the Horizon
Volume 12 · Number 4 · 2004 · 150-156

The good old days

A group of teenagers who had spent months exploring eLearning and the future of the school gave the penultimate presentation at eLearnInternational.

Ten of them took the stage and acted out their messages, something no "grown-up" had even considered. Instead of showing a PowerPoint slide about learning styles, they asked everyone to complete a personal Learning Styles Inventory.

In a truly lovely moment, a female student gripped the podium and put on a schoolmarm's critical gaze. Someone in the audience snickered. "You there, what's so funny?" she growled. That drew laughter. She shushed us with a penetrating frown of disapproval. Learning through intimidation. Remember it? There is a better way.

The age of networks

Everything is connected. Each of us is enmeshed in innumerable networks. You're linked to telephone networks, satellite networks, cable feeds, power grids, ATM networks, credit bureaus, the banking system, the Web, the Internet, intranets, extranets, and networks that are local, wide, wireless, intelligent, dumb, dark, secure, virtual, and peer-to-peer.

Social networks interconnect us in families, circles of friends, neighborhood groups, congregations, professional associations, task teams, business webs, value nets, old boy networks, sororities, bowling leagues, user groups, flash mobs, gangs, political groups, scout troops, bridge clubs, 12-step groups, and alumni associations.

Human beings are networks. Scientists are still conceptualizing the human protocol stack but they affirm that our personal neural intranets share a common topology with those of chimps and other animals. Once again, everything's connected. Learning is a whole body experience.

Connections accelerate change

Time goes ever faster. Moore's Law doubles computing power every 18 months, bandwidth doubles twice as fast, and connections grow exponentially with each additional node. Interconnections beget complexity, so we have no concept of what's ahead.

Six years ago, Intel CEO Craig Barrett said, "We're racing down the highway at 150 mph, and we know there's a brick wall up ahead, but we don't know where". We still don't know where, but today the car would be hurtling along at 1,500 mph.

Change is racing along so fast that old learn-in-advance methods are no longer suffice. While network infrastructure is evolving exponentially, we humans have been poking and plodding along. Because of the slow pace of evolution, most human wetware is running obsolete code or still struggling with a beta version. We've got to reinvent ourselves to get back on the fast track.

According to a US Department of Labor study:

- fundamental change in the workplace is that the best new jobs require highly educated and highly skilled workers;
- a total of 1,950 skilled workers = 28 percent. 2005 estimate is 85 percent;
- workers are changing jobs approximately every 2.5 years;
- employees now list "the opportunity to learn" as one of the Top 5 job criteria; and
- in two years, education will be among the most valuable differentiators for partners, employees, and customers.

An alternative model for learning

In a world where we don't know what's coming next, what constitutes good learning? We're in Class V whitewater now, and smooth-water rules no longer apply. In waves over your head, rooster-tailed whitewater, successful learning means moving the boat downstream without being flipped, preferably with style and grace.

In life, successful learning means prospering with people and in networks that matter, preferably enjoying the accompanying relationships and knowledge.

Learning is that which enables you to participate successfully in life, at work, and in the groups that matter. Learners go with the flow. Taking advantage of the double meaning of the word "network", learning is making good connections. To learn is to optimize one's networks. Let me say that another way: To learn is to optimize one's networks.

Putting the new model to work

The concept that "Learning is making good connections" frees us to think about learning without the chimera of boring classrooms, irrelevant content, and ineffective schooling. Instead, the network model lets us take a dispassionate look at our systems while examining nodes and connections, seeking interoperability,

boosting the signal-to-noise ratio, building robust topologies, balancing the load, and focusing on process improvement.

Does looking at learning as networking take the humans out of the picture? Quite the opposite.

For social networks, future learning includes social network analysis tools to help people connect. Most learning is informal; a network approach creates collaborative learning environments and makes it easier, more productive, and more memorable to meet, share, and work together. Emotional intelligence promotes interoperability with others. Expert locators connect you to the person with the right answer the way Friendster matches single people looking for a companion. Imagine focusing the hive mind that emerges during a massive multiplayer game on a business problem. Smart systems will prescribe the apt way to demonstrate a procedure, help make a decision or provide a service, or transform an individual's self image. Networks will serve us instead of the other way around.

"On demand" will take on a whole new meaning. Instead of a manager saying "Get it to me today", will be replaced with more specific requests, a new taxonomy of "I need to know now", "I need to know soon", and "I need to know some day" will take over. Some day will come to mean the old default of "Someday I may be able to find the time and money to take that course".

For tech networks, foundation meta-processing skills will foster the growth of self-determined learning. Personal knowledge management systems will store memories like today's PDAs, and facilitate rapid knowledge sharing across one's network. Electronic portfolios will replace resumes. Alter-ego agents will seek out and present us with a balance of normal alerts and fringy out-of-the-box wake-up calls. The norm will be a balance of push and pull, give and take. If it helps me do my job that's what I care about the most. If I learn it and forget a day later, I still learned it long enough to use it. Use it and lose it may become a new bumper sticker in the corporate parking lot.

Fleeting knowledge

In my college days, everyone learned to use slide rules and logarithms. Since the proliferation of electronic calculators, today's students no longer need lessons on slip sticks and code books. Similarly, when I was on campus, a graduate was expected to know basic philosophy (Descartes, Hume, Kant, etc.), literature (Shakespeare, Dostoevsky, Camus, etc.), history (revolutions, colonies, wars, inventions, dates, etc.), science (elementary physics at least), and lots of other stuff that had been piling up over the past half-millennium. The assumption was that this foundation of core knowledge would last a lifetime. It was the close of an era where a learned person could know it all. More words have been written and more ideas expressed since I graduated than were written in all of previous history. We'll always need a collection of models as a foundation of cultural literacy but we'll swap them out like replacing brake pads.

As Louis Ross, CTO, Ford Motor Company, has pointed out, "In your career, knowledge is like milk. It has a shelf life stamped right on the carton. The shelf life of a degree in Engineering is about three years. If you're not replacing everything you know by then, your career is going to turn sour fast".

What does one need to learn to keep pace in the modern world? How to make sound decisions in the face of uncertainty. Business is complex; organizations are complex; society is complex; the world is complex. What, you ask, does complexity mean? When we say something is complex, we're acknowledging that we'll never entirely figure it out. It's unpredictable. There are too many things going on, and they impact one another.

At one time in my life, I could recite the kings and queens of England, the books of the Bible, and the names and capitals of every country in the world. Now that these things are but a few keystrokes away, it is pointless to memorize them. In place of memorization, today's learners need search skills, conceptualization, analysis, reasoning, decision making, and emotional intelligence.

Learning is the primary determinant of personal and professional success in such a world. People and organizations that strive to succeed in our knowledge-driven era had better get good at it. Meta-learning focuses on the long term, helping individuals learn how to learn and groups how to create optimal learning environments. According to Sidney Perelman, eminent economist, "Learning is what most adults will be doing for a living in the twenty-first century".

Enterprise learning

Major corporations around the world have automated huge chunks of their operations with ERP, CRM, SCM, and other enterprise systems. Each has consolidated thousands of job-shops and piecemeal operations. They have replaced family farms with collective farms, but it hasn't been enough. Production remains unconnected to

consumption. Three or four mammoth silos stand where hundreds once stood.

Now Web services are forging links between the remaining silos. They are plugging together information flows like so many Lego blocks. Applications are talking to applications. IT's Tower of Babel is eroding. The computers of suppliers, producers, partners, sellers, and buyers are all speaking the same language. Interoperability is becoming a reality, and the real-time corporation is being born.

Take a robust ERP or CRM system. Add collaboration. Add enterprise content management. Add product life-cycle management. Add business process management. Add simulation and real time eLearning. Each element makes the enterprise system more powerful, but the resulting real-time enterprise is greater than the sum of these parts: it links strategy and execution in real time.

This new, interconnected environment is giving rise to workflow learning. Workflow learning (Adkins, 2003) takes place in real time; it's a component of a much larger system that tracks activity throughout a zero-latency organization. It's a "smart" environment that helps provides workers with instructions, what-if practice, and people to connect with when their interaction with workflow goes awry. Why learn from a description of the real world when you can learn from reality itself?

Enterprise learning is largely automated. Real-time knowledge workers will face transactional portals that enable them to monitor the flow of work throughout the system. This is the old idea of the "dashboard" that provides a reading on where you're going, how fast, and whether all systems are go. What's new is that workers also get a steering wheel, gas pedal, and brake that enable them to change the workflow that's being monitored. If the system's guidance is insufficient, the system will locate the right driving tutor to help the learner stay on course.

Workflow enables new knowledge workers to do their jobs. Whether they are answering phones for Microsoft or Johnson and Johnson in New Delhi or collaborating on a new project from the four corners of the globe, if they are part of an enterprise integrated with Web services, they will be receiving direction and instructions as they work.

Emergent learning

Until the beginning of this year, I was CEO of eLearning Forum, a nonprofit advocacy group that promoted best practices and new developments worldwide. At the Forum's early meetings, back in 1998, we were eLearning enthusiasts who felt as if we were in on a secret the rest of the world had not yet found out. We considered ourselves visionaries. We thought outside of the box.

As eLearning became mainstream, that initial excitement and luster began to fade. The things we wanted to explore increasingly fell outside the boundaries of eLearning. I saw great promise in such things as:

- communities of practice;
- active collaboration;
- embedded support;
- simulation;
- informal learning;
- story-telling;
- dynamic portals;
- expert locators;
- social network analysis;
- learning on demand;
- give and take;
- co-creation;
- workflow integration;
- search;
- help desks;
- spontaneity, emergence;
- outsourced mentoring;
- games;
- keeping-up;
- personal knowledge management;
- learner control; and
- presence awareness.

Corporate models were changing from hierarchy to anarchy, from command-and-control to "boss-less", from rigid to flexible, and from office-bound to virtual.

Everywhere we turned, in business, in software, in the economy, in our careers, in competition, and in how people learn, entropy appeared to be replacing order. In one of the Forum's meetings in Fall 2003, Allee (2002) had introduced the notice of complex adaptive systems.

The science of complexity does away with the simplistic, cause-and-effect, linear perspective of how the world works. Complex systems are collections of pieces, each with a mind of its own. These pieces could be ants or airline prices or human cells. When they come together, something new and different is created, e.g. an ant colony, a live marketplace, or a human being. The process of coming together is called "emergence". Things that emerge cannot be separated back into their component parts without losing the essence of the system. As Verna say, you saw a cow (a complex system) in half, you don't get two cows; you get a mess.

After nearly a year of stewing about it, we renamed ourselves the Emergent Learning Forum.

Our focus is on the future. We are investigating what happens at the point that people, technology, and other complex systems converge. We are seeking ways to leverage a new world.

The volume of business information doubles every eighteen months. In the time I've been writing about eLearning, the sum total of human knowledge created since the dawn of time has doubled! Cycle times are increasing. Workers are expected to do more with less, faster than before.

Not so long ago, workers had a role to play. The Man in the Gray Flannel Suit and The Organization Man memorized their lines and followed the script. Today's workers are improv players, inventing their roles and making up their lines as they go.

The world is complex and the future, unpredictable. eLearning is dead. (Long live eLearning!) A new world is emerging. When the student is ready, the teacher will appear. Perhaps on the screen.

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