

Whither academe or wither academe: a personal view of the future of learning.

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The year is 2020 and a group of tourists have gathered in the old university town for the highlight of their trip from the Far East. They are to see what education used to be. Silently and reverently they enter the vast tiered lecture theatre. Before them a lecturer is covering the board with words. On the theatre's seats students sit in positions of repose and dainty activity. Except these are not real. The lecturer is an animatronic figure and the students are a mixture of animatronic and wax figures. The guide, to the hushed group, explains that as little as fifteen years ago this was the way learning was delivered. The older members of the group nod their heads in agreement while the younger members express their horror. Moving on, the group climbs into their coach to return to London to visit the Royal Academician Summer Exhibition to see the latest exhibition of research papers.

This portrayal of the future may seem far-fetched, except some twenty years ago I forecast (in an article in Marketing Magazine) a computer on every desk and (at a symposium on Management and the Microprocessor) that home shopping via electronic links would be widespread at the millennium. Current technological capability and trends in education mean that a similar paradigm shift will occur for learning. The emphasis will move away from gaining knowledge to developing wisdom and the teaching focus will be on the learning process.

Change factors

As with any technology driven changes there are several interacting factors. The most important for learning are the technology, the way knowledge is distributed and the requirements and capabilities of students.

Since I bought my first microcomputer in 1980, their power has increased several thousand times. In 1980, my top of the range microcomputer had a Z80 chip, 48k ram, twin 80k floppy discs and cost £2000. Today, at half the price I can buy a microcomputer with an 800mega Hz processor, with 128meg ram and a 30 gig hard drive. Even a bottom of the range microcomputer costing a fifth of the 1980's price is more than a thousand times more powerful than my 1980 microcomputer. If this trend continues, by 2020, our home computers will be several thousand times more powerful. Even if this is not the case, today's computers are more than capable of delivering effective, efficient and exciting learning - which is more than can be said for many, perhaps most, teachers.

Next there is the question of delivering learning. Research by Motorola University suggests that the lecture has a five percent retention rate, audio-visual methods a twenty percent retention rate and learning by doing a seventy-five percent retention rate. Today, the growing availability of packaged learning on CD-ROMs or via the Internet means a fourfold increase in the effectiveness of learning. Also we are seeing a change in the accessibility of learning. With packaged learning, you do not need to go to the *best* school or *best* university to gain knowledge - the best is and will be packaged on a CD-ROM or on a web site.

Student requirements are, perhaps, key. First, conventional learning delivery is becoming progressively more expensive. A recent article in the Times suggested that an undergraduate course would cost the student £60,000. With the student paying he or she will demand value for money. Also, with the spread of consumerism and the spread of information, it is only a matter of time before there is an Internet site that compiles student satisfaction statistics about Universities and individual lecturers. It will not matter what the lecturer knows, rather it will be how well he or she teaches that is important.

Student capability is also changing. Regularly, I read of children passing exams many years before normal. If, as a child, I had a computer I would have used it to explore and build my knowledge of electronics years before I read for a degree in electronics. I would have known as much by the age of fifteen as I did at the end of my degree (at the age of twenty-one). Also, as I would have gained this knowledge from CD-ROM and via the Internet, I would have controlled the learning process and, at university, I would have demanded control over what I learned and how I learned. I would not have sat passively and uncomfortably in a lecture - especially if the lecturer was repeating what I learned years before via CD-ROM.

From knowledge to wisdom

I believe that how one learns is as important as what one learns and the two are inter-linked. Yet, often, the learning process is ignored. This may be because many see learning as building knowledge and teaching is done by subject experts who focus on content (rather than learning). I believe a focus on knowledge, as exemplified by the phrase "knowledge society", particularly misleading and unhelpful. I am not and probably never have been interested in gaining knowledge per se. Rather I am concerned with being able to do something and so, I am interested in gaining *wisdom* - where wisdom is ***the possession of experience and knowledge, together with the power of applying them critically or pragmatically.***

I believe that, over the next few years, we will move from a knowledge-based society to a wisdom-based one. Knowledge acquisition will be via CD-ROM and the Internet. After people have gained a foundation of knowledge, learning will focus on developing wisdom. This wisdom acquisition will be based on learning processes that require people to think and apply knowledge - processes that involve gaining real world or simulated experience. Consequentially, creating experience and the ability to apply it will be a major part of learning. This will lead to a cardinal change to our schools and universities - a change that is long overdue.

Learning Industry Structure

In the past, the learning industry has been craft based. Like the village chair-maker of the eighteenth century, the lecturer gathers his raw materials (through research), turns it into a lecture (using the primitive tools available) and then delivers it to the students (sells it to the villagers). Thus the lecturer provides all stages in the creation and provision of a learning product. And, like the chair-maker is more interested in and capable in only one or another of these stages.

This arcane industry structure is very different from the structure of the rest of industry - a structure that separates the design of the product from its manufacture and distribution. We are beginning to see changes in the structure of the learning industry with the creation of packaged learning (CBT, simulations, videos etc.).

Learning product design must be based on fulfilling market needs (providing all stages of learning from knowledge acquisition, through gaining experience (real and simulated), to developing wisdom (the ability to critically and practically apply the learning)) rather than being based on the perceptions of quality by the product provider (university).

Manufacture (learning product creation) must focus on providing a suitable learning experience (process) to ensure the desired learning. Paralleling industry's manufacturing engineer this will be done by a learning engineer and different types of learning will utilise different learning methods.

Delivery (teaching) separates into two - fully automated (CBT) and manual learning (involving a teacher who manages the learning process - the Learning Manager). The manner of delivery (teaching) will depend on whether the purpose is to build knowledge (the foundation) or build wisdom (the apogee). Knowledge acquisition can (and will be) fully automated but wisdom acquisition must, I believe, involve working in groups with the process managed by a teacher.

Whither or wither

Will the current providers, the universities, adapt and retain their leading role or disappear. Unless they are exceptional, it will be the latter. Industrial history is littered with businesses that did not and would not adapt to technology driven market changes.

What are the barriers to embracing the opportunities offered by the technology?

First there is academe's reward system. In academe, the incentive seems to be to publish (research) papers. Teaching (student satisfaction) is discounted and *good* teachers are not rewarded to the same extent as those who publish regularly and in the *right* journals. This means that academe is populated mainly by highly skilled researchers rather than highly skilled teachers let alone learning managers, learning engineers or learning product designers.

Second, when teaching is no longer delivering knowledge, even the good teachers have the wrong skills. Being *good* at lecturing is very different to being able to facilitate and manage learning where this is student-centred and where the class is working in several small groups of individuals discussing, promoting views and arguing their views.

Third, there are the facilities. Where teaching is viewed as lecturing (delivering knowledge) this is most efficiently done in tiered lecture theatres. But as teaching changes these will become redundant. Two years ago I was asked to run one of my simulations at a leading university. My main problem was not the participants (who despite not reading a business subject easily handled the complexities of running a simulated business) but the facilities. It was impossible to work in small groups in a tiered lecture theatre where the chairs were bolted to the floor facing the lecturer!

Fourth, there are the economics. When, in the late 1970s and early 1980s, the electronic chip replaced mechanical controls the manufacturers of these had the problem of disposing of the wrong types of resources. When knowledge acquisition is automated, not only will academe have the wrong type of staff but also the wrong type of facilities. And, it will be immensely expensive to dispose of these. (Although, perhaps, as illustrated in the opening paragraph, some universities can be transformed into theme-parks. And others (those in cities) may be able to change their buildings into the academic equivalent of loft apartments (perhaps lofty apartments).)

Finally, and perhaps most importantly, there are the perceptions of academics. Like past industries faced with technological change, academe is likely to perceive packaged learning as an inconsequential competitor whose quality is questionable.

I await an academic to pronounce that ***"whatever part of the education market remains as the major provider, I believe that the traditional university will have it because we already have the relationships, character and image"***. Yet this exactly paraphrases a statement made by the Swiss Watch Manufacturing industry just before the electronic watch destroyed it.

University management will, like the Swiss Watch manufacturers (whose resources existed to make mechanical watches), see the university's purpose to produce high quality research (papers) rather than teaching. Yet tomorrow's *quality* learning provider must be able to create learning packages that deliver knowledge and wisdom acquisition in an exciting, effective and consistent manner. A requirement that demands different resources and a different industry structure.

The Issues

How might the learning industry evolve?

First, academic research may become more stylised. This is illustrated in my opening where I refer to the Royal Academician Summer Exhibition. Here, like much of today's art, the emphasis will be on style rather than substance. On academic fashion rather than general (market) need.

Second, students will, aggressively demand better teaching and will look for cheaper and better alternatives and this will lead to falling student numbers and university revenues. With high fixed costs, more and more universities will operate below break-even and eventually cease trading. (Well established universities with significant reserves will be the last to go but go they will.)

Third, even for knowledge acquisition, the learning process will become at least and possibly more important than content. Generally the lecture will be replaced by CD-ROM and web based training. For experience and wisdom acquisition, the teacher will become a *learning manager* using student-centred learning tools such as simulations and games. A learning manager whose task is to develop the facility to use knowledge, build (simulated) experience and wisdom in a coached and regulated environment.

Fourth, large companies will *sponsor* the development of learning packages for all levels of learning from pre-school to post-graduate. They will use the higher level packages in-house to train staff and will use all levels of packages to promote the company's role and image in the community.

Fifth, for learning to address issues beyond knowledge acquisition, there is a need to encapsulate wisdom. This means that there is a need to *harvest* wisdom from experienced and knowledgeable people. This is a process that is the antithesis of academic research. Instead of excluding the researcher from the process, the researcher is central and the process must focus on how he or she can extract, refine and generalise his or her experiences and wisdom into learning packages that can take learners beyond knowledge acquisition.

Finally, the learning or wisdom creation industry will become a large, perhaps the world's largest industry. But, the main players in this industry will not be today's universities.

About the Author

Jeremy has been involved in management development of working business people utilising computerised simulation for more than thirty years. Over that time he has developed more than fifty computer simulations aimed at helping managers develop experience and explore business in a simulated, coached and controlled environment. He invites your comments and views of the future of learning by e-mail at jeremyhall@simulations.co.uk.