15 The Knowledge Economy Iceberg Meets the Good Ship Education

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Abstract

This paper reports on an institutional response to the findings of two international Delphi investigations. Although a local response, the principles and the software can be applicable to a variety of institutions at all levels of the educative process.

ICT offers enormous potential for education. However, many of its applications focus on the more straightforward area of resource provision. By 2002, there is no shortage of content, either educationally or commercially generated.

One of the more valuable applications of ICT though, and one that is largely overlooked, is that of managing the learning which is to take place or taking place. Content can be linked to a management system but is often more economically provide by a third party. For educational institutions at all levels perhaps the more crucial operation is to flexibly manage the learning that takes place. Moving digital emphasis from content to management is not yet a common consideration.

Eltham College has developed a prototype for a truly integrated learning management approach. It is presently based on formal schooling years (in our instance, from age 3 to 18) but offers solutions to a far wider set of conditions.

The Eltham model offers parents in their homes an online "Knowledge Community" that provides them with complete course/learning programs, selected assessment processes, rationale for that assessment and reporting on their students progress on a daily basis or on the basis of their students progress. The student has similar access, though more detailed in terms of the actual learning process. At all stages, both students and parents have direct access to the teachers involved. The system that results is one in which all parties to the learning process are clear on the intentions and activities as well as actively and interactively involved.

Eltham has firmly based their learning model on the community concept in which all participants of the learning process are involved and all processes are readily transparent.

In the post compulsory model, beyond state compulsory schooling requirements, the involvement of parents as a key layer group is not necessarily relevant. There is a growing school of thought, in Australia at least, that parent involvement at tertiary level has distinct advantage, though much less easy to involve both in legal and practical terms.

The net result of the digital community established is a greater flexibility of educational opportunities combined with a more transparently managed learning process. Students are aware of their learning progress, able to choose more widely how they wish to learn, when and where. Learning has become for them more supportive because they are a part of a learning community, with clear links and clear support mechanisms.

Keywords: learning, knowledge economy, knowledge community, transparent education

1. Introduction

In 1912 the captain of SS Titanic, either chose to ignore the larger part of the iceberg that confronted him, or refused to accept it was a problem for him. Either way, the results are history. His ship was one of the largest in its time, one of the most modern, hi-tech devices of its type. It represented a huge investment of time, skill and development. It sank all the same.

Education in the twenty-first century faces a number of issues – not all of them positive. In a climate of uncertain economic futures educational institutions at all levels face escalating costs, increasing competition for students and for funding. Many tertiary institutions, especially those operating within a "western" culture context, have become highly commercialised. This tends to be reflected by increasingly vocational targets for courses and stronger competition for available research and corporate funding. While the move from a "general" education to a specific one is not necessarily bad, there are potential threats. One of those already being faced by some is the growing number of courses that require constant review and frequently, constant capital outlay. The range of IT courses are possibly the best examples of these. Do we teach to Windows 98, 2000, XP or what? Are the more specific directions of courses producing the necessary "global" citizen of the next generation?

These and similar challenges are presented to educational administrators and educators generally, within the context of rising costs, especially those relating to the technology. Hardware is expensive but necessary. It is constantly in need of upgrading as the software changes even faster than hardware. Further, while the equipment is constantly changing, one of its major uses is to provide ever-faster access to ever increasing quantities of data and information. This, in turn requires constantly growing bandwidth so that the access is possible. And so the cycle continues.

Resolving at least a part of this dilemma requires some new or perhaps revised management strategies. Taking what might be

a micro view for a moment, libraries of the nineteen fifties, whether educational or public, were generally viewed in terms of "storehouses" (Dowler 1997, p.158-9). Systems were in place, constructed on the basis that users could enter the four walls if the library, locate the resources they needed there and then, massage those resources to suit their needs and emerge into the sunlight complete with their new knowledge and ready to tackle their next project.

Today, libraries rarely admit to holding all the necessary resources. Their managements accept that there exist new sources and resources beyond the physical buildings. Development of the intranet as a public tool forced those considerations on them from the early eighties. The modern library is more of a gateway to information (Dowler 1997, p.159, Prytherch 1998, p.5), a place where communication tools and trained search staff meet with the information seeker to begin a magic carpet ride to a "whole new world". This change in library nature has brought with it a drastic rethink of the way libraries operate, their physical construction and the skills required by their staff.

Similarly, it is necessary for educational establishments and administrators to review, continuously, their management strategies. These strategies are essential to avoid the good ship Education being wrecked on the Knowledge Economy iceberg. No longer can any particular institution be seen as sufficient to itself. We work in a highly interactive world. Our learners already operate in a far more connected way than most of their instructor generation and will move on from us to live on a "stage" largely unfamiliar to us.

2. A new learning Paradigm

The context of learning at the present time is different. One only has to pick up any of the current books on lists of popular children's literature to find that times have changed. Words and concepts are regularly available to children today that were not acceptable even a generation ago, in readily available material. Mass media content too reflects a new "morality". The context of growing up, is different.

Running alongside the literature and mass media is the development of technology that has dramatically changed the way even very young children communicate. For almost a generation, young people wrote few letters. Telephones were readily available and voice communication saw letter-writing skill almost die out. More recently, children of all ages have rediscovered writing in the form of email and text messaging. At the same time they have reinvented phone communications in a mobile context (one of the largest selling Christmas gifts for under 12s in the UK last Christmas).

There are many other examples. We do work as educators with a different student to that of the eighties, and maybe even the nineties as well.

Post compulsory schooling, the tertiary years in particular, face all the same issues. Electronic information is expected, with many of our learners far more proficient in processing data (and misappropriating it) than we are. The use of libraries is one clear example of this. Online resources are expected and used, sometimes exclusively. Library managements have had to face increasing pressure to offer their materials on line and where some have been better at this; they have frequently become a focus for users in many geographically different areas, perhaps to the determent of local institutions.

Internet resources and their extent has seen dramatic change with whole libraries of full text materials now available on a wide variety of topics. To these can be added an even greater number of partial providers or extract and indexing services.

In the teaching/learning field, most establishments now operate some form of "online" learning program.

Clearly, where our students are coming from and the way we are being "pressured" to deal with them, is creating a whole new learning paradigm. Once upon a time it was "good" teaching practice to stand at the front of a group of students, take 50 minutes of their time lecturing them and then retire quietly to an office safe in the knowledge that they would have gained considerable information if not knowledge. Highly motivated persons might add a few flourishes on a chalkboard to that formula – they were the radicals of the 1960s.

In the present age, PowerPoint's, interactive whiteboards and other assorted technologies tend to be common. Not necessarily because, we have discovered they are better, or because we can do it (though these might play their part) but because, we are more or less expected to be "modern".

Providing the technology, managing it, and managing student learning in and around it, has created a new dimension for the management of learning. Both the teacher and the administrator have needed to become more creative in terms of financing an increasing technology and in terms of providing learning that fits a different paradigm.

3. New Management Strategies

Two very important considerations face the educators of the new millennium. One, perhaps the first to be dealt with, is the "how" of learning - the mechanics of accessing information, of processing it and assimilating it. The second, and very much related one, is the "who" of learning - who is involved and where they can be located.

Information overload is virtually unavoidable in the present century. Growth of IT in all its aspects has opened the floodgates. As educators we need to stay mindful of this. It is a problem all our learners need to cope with, especially the younger ones, but equally the not so young. What help can we offer? There are three issues here. The first is one of access - How much? How little? or simply, How? We need to budget for bandwidth. One consultant recently wrote:

Until this point in time the vast majority of schools have been dabbling with Internet links and indeed their whole

telecommunications. Most are using 56K, or 64K or 128K ISDN connections. In relative terms those connections are but garden lanes to the networked world. You should be planning to move in the very near future to broadband – 400 K plus – connections, the now clichéd 'information highway', with its facility to carry multiple services. WA has opted in general terms for a10 Meg – or 10,000K - standard for its government schools. (Lee 2002)

His allowances for schools need to be multiplied many, many times for tertiary institutions. And that is only the beginning. It is no longer a question of "will we" but one of "how much", and that question seems to have no accurate answer. Tied to the issue of bandwidth is the one of understanding the material access thereby. Learners need the comprehension tools for this understanding. Many establishments, including some governments, are already emphasising information literacy. It has been around in some form for many years. But what does it mean in the context of our current information overload and what will it mean in the future. Has the development of IL concepts over the past twenty years or so helped us prevent overload?

Clearly, one aspect of information literacy is more vital now than ever – that of evaluation. The Internet has certainly increased the amount of information available to each one of us, but are we any more discerning? Technical improvements that take advantage of greater bandwidth have usually worked well to deliver more information. Is it better information? How can we tell? Larger servers do not provide us with any assurance of valuable information. Improvements in software do not seem to have moved us far in this direction either.

In 1996, the Online Meeting in London featured a stream of discussion as to the importance of human intermediaries, people skilled at evaluating material and teaching evaluating skills to users. That meeting also featured considerable debate on issues surrounding quality and evaluation (Raitt and Jeapes 1996, et.al). Four years later, the importance of evaluation and quality were still being debated (Kerr 2000, et.al). Meanwhile the amount of information to be evaluated had obviously kept growing. If the issue presents difficulties at a theoretical level, have can learning facilitators cope with it at a practical level and on a daily basis?

The transition from information to knowledge, the essential product of "learning", needs to take place within this sort of difficult ecology. The raw material, information, needs to be complemented with the tools to unpack it, understanding, evaluation, etc. Only once they have the tools can the learner be successful in converting the information to knowledge.

This matter raises the second important management consideration – that of the "who" in learning. If tools are needed to unpack all of the information available, to select from it and make sense of it, where do these tools come from? One weakness in early ICT applications was the "unguided" nature of those initial approaches. Five or six years ago, in the full heat of the internet excitement, it was sometimes considered enough to simply provide a linked computer on the employee or learners desk and they would find the required information and become instantly knowledge rich. It was not long before the early, free access situations began to display some unwanted products. Intermediaries have come to be recognised as entirely necessary if real learning is to take place efficiently and effectively. Learners need not only the resources but also the skills to learn. These skills are acquired by transferral from already skilled people. Specialist training in access, evaluation and the other information literacy skills is required. Those skills are provided by specialists and the combination of learner and learning facilitator allows progress with learning.

So – navigating education through a Knowledge Economy requires a map, compass and crew. There are many dangers and the ocean of information is huge.

4. Traditional Online Learning

In the past ten years or more a number of educational establishments have moved into the field of "Online Learning". There are many reasons for this, not the least of which is capturing an entirely new "at home/work" market. Increasing multimedia interactivity has provided further encouragement to the online moves. In some instances, especially medical and scientific areas, it is far safer and more cost effective to learn by simulation than it is by practice – at least in early stages.

Online developments at the University of North London illustrate the value of interactive resources as a stimulant to learning engagement (French 2001). Combining technologies can further enhance the type of material that can be presented only in an online form (Farrimond 2001). For a variety of reasons then online learning is common, and growing. It brings with it considerable cost in terms of research and development. These costs can far exceed the financial resources of the establishments who wish to use them and so we have a potential for a great knowledge rich/knowledge poor divide.

A common factor with current online developments is the resources direction. Another is the concentration on web-based technologies.

4.1. Resources Online

Resource webs were a natural first step in the move to online learning. These were (are?) generally still built around libraries – both institutional and public.

In the past information management was to a large extent fixed and predictable. Glasgow (2000, p.300), in an article dealing with the origins of the Library Association (UK), noted that libraries in the early part of the twentieth century could be characterised by their staff who were "learned, distant and affable". Collections were directed by a policy of "not what they want, but what is good for them". Emphasis was on

"good" cataloguing, extensive bibliographies and comprehensive classification systems (Glasgow 2000, p.300-301). Academic libraries were formal though informed. Users were expected to select from what was available, limited as they were by the extent of the particular collection they were eligible to use.

Perhaps Glasgow best sums up the traditional library in his comment on the public libraries of Bootle, U.K., as a system with "many books, borrowers and readers" (Glasgow 1998, p.237). The description of a successful library in terms of its numbers of books and users ("real" not virtual) seems to typify the library information industry of the post-war period. Success or worth of libraries during this period seems often to be summed up, even by contemporary writers, in terms of the amount of material – the extent of their collection. As Hoare (1998, p.381) put it:

> The significance of public libraries, a major source of information – increased through the deposit of official documents.

This view of information provision was equally true of public or academic libraries (Hoare 1998, p.380, Cheng 2000, p.19). In either case the emphasis lay on extent of collection; a collection often imposed by staff on their users, and not necessarily in response to user needs or wishes. As Cheng put it:

> Until a few years ago, the pattern of information access was a discontinuous one. Our users were accustomed to searching the library catalogue or indexes for suitable titles then going to the shelves for the actual full text of books or journals (Cheng 2000, p.19).

Online learning in its early years tended to build on this situation and extend it. Online learning generally took the form of online resources including, quite often, the actual curriculum materials for the course involved. Engineering at Monash University (Aust.) for example, offered "online learning" consisting of entry digitally to a portion of online materials available from the library together with a digital copy of the course workbook previously distributed to students in print form. The only concession to interactive "learning" made, was that tutors emails were included as appropriate.

4.2. Web-based Online services

More recently, a number of institutions have seriously rethought this position. Learning is more than access to information. It includes a high proportion of interaction and reaction with and to resources. One outcome of the Delphi discussion in 1996 was clear indication that web based learning was to grow. As a result, ELTHAM put in place a program of revision in terms of curriculum and learning. At ELTHAM we first tried, as did many other Australian establishments, a Virtual Private Network approach with Citrix software running multiple Windows sessions. The arrangement was only partially successful. While students could operate software and applications remotely, the arrangement proved slow, trouble-prone and lacked the interactivity that made learning outcomes more positive. Additionally, learning could not in any way be tracked, planned or managed. Greater flexibility was needed together with more room for interaction. Our decision to move away from a VPN solution is presented at http://www.elthamcollege.vic.edu.au/arthur/ERResources/VPN.htm.

Like many others we now operate a web based system. This gives us the advantages of speed and cost savings – both hardware and software.

5. A Learning Management System

As conceived at ELTHAM and Corskill, a Student Learning Management System (SLMS) provides a managed environment in which learning is facilitated. It manages the conditions for learning but does not provide the material on which the learning is based. It DOES provide a number of gateways to sources of that information.

ELTHAM has taken the base concept of the SLMS and built round it a Knowledge Community made up of all the stakeholders in a school learning ecology. The Corskill Knowledge Community is a similar model based around tertiary vocational training. While neither is specifically directed towards current university practice, the principles and even the system can be tailored easily, and would suit any digitally biased learning environment.

5.1. The Knowledge Community

A knowledge community can be defined as a community in which knowledge is shared, valued and created. It is an environment where access to information is extended to include response, reflection, discussion and true knowledge building. It is most productive when the knowledge that is so constructed is also itself stored, shared and reflected by all parties in the community.

At ELTHAM, our Knowledge Community connects learners, their families and their educators into an interactive and transparent learning environment. It is the front face of our college timetable, database, archive, reporting and curriculum systems. It makes learning transparent; all stakeholders can view and participate in the learning program. It is a single point of access for all our stakeholders designed specifically to simplify and clarify all aspects of the learning process. It incorporates the requests of all stakeholders so as to meet their needs better.

At the heart of this community is the Student Learning Management System (SLMS) that provides and maintains the data necessary to allow the dialogue between learning materials and human participants.

5.2. The Student Learning Management System

As applied at ELTHAM our SLMS links together all the shareholders in the learning process – in our case, students, educators and parents. It links to the timetable, the student database, the financial records and a digital archive system. By using a friendly front face, the intention is to build confidence in our users as well as leave positive images of learning. Our concern has been to provide a system that:

- Links all stakeholders together in an environment of shared responsibility
- Guides learning pathways – "gateways"
- Points to resource people
- Links learner and intermediary
- Links learners to each other
- Adds in other stakeholders, eg. Local business
- Defines outcomes
- Links learning to outcomes clearly
- Establishes life-long patterns
- Stores and archives material – cuts down email clipping distribution and provides open access for user selected items.
- Gradually eclipses email
- Rewards and encourages knowledge sharing

5.2.1. Operation

The intranet is operated on the basis of easy access. Connection to it is possible from any machine in the college (and most rooms have at least one computer) or through the remote access VPN. Thus, the various players can add material; take part in discussions or view specific information with relative ease. Considerable work has been undertaken to ensure that the front end is logical and attractive as well as easy to use. Further, considerable effort has gone into providing areas of the intranet that will encourage participation. Chat sessions, interactive material, learning activities that require involvement (games) and even travel hints (add your own) sections encourage engagement and give a real sense of involvement in the whole learning process.

With student management integrated into the web, assessment and reporting has been made as simple as possible while recording results, making judgements and providing assessments are all possible as frequently as staff wish. This arrangement allows a parent or student to log in and check their progress at any time as well as to compare their progress with the requirements and expectations of the course. This arrangement is intended to build on the learning process adding a sense of responsibility as well as removing any "mystery" or uncertainty that might affect a student's progress.

Importantly, while class work sections offer a place for actual course materials to be provided, staff is encouraged not to spend unnecessary time developing learning materials otherwise available. While the Internet is not a giant library in the sky, much material is none-the-less available in electronic form at reasonable cost. A digital learning environment takes advantage of that material by providing gateways to it. Where a really managed environment differs from others (eg. A bulletin board style) is in the ability to flexibly move from item to item in a multitude of pathways. For this reason we have concentrated on a fully interactive web based learning system rather than the bulletin board style. This makes learning to use the system a little difficult but it does enhance the learning that can take place. By providing a multitude of different pathways towards some very definite outcomes that are visible from the start, we plan to allow learners freedom to learn as well as direction and value for their efforts.

5.2.2. Mechanics

To keep the whole arrangement very simple as well as to ensure maximum participation (even our grade 2 are contributing web pages) we have standardised on common software. The network is MS Win 2000/NT4, with web construction using MS FrontPage and Flash. Corskill provided the framework and interactive mechanics and our own data program provides the spreadsheets on which the web system operates. Wherever possible, web based software tools are accessed directly from a "tool bar" at the foot of each page. This toolbox varies depending on who has logged in (simpler packages for the younger students) or what area the user is exploring.

The system is not expensive. Cost–wise the total package would be well within the reach of most averages sized/funded educational establishments. Add-ons can and do cost extra. The extent of infrastructure to support such a system and the size of physical establishment will also impact on cost. However, the returns on such investment can be exciting – not necessarily in terms of financial gain but certainly in terms of client satisfaction and particularly in terms of capitalising on the enormous intellectual capital resident in educational communities and often not more than partially realised.

5.2.3. Flexibility

A structure like that established at ELTHAM allows a new dimension of flexible education. Using the intranet a range of tasks usually carried out in the classroom can be to electronic delivery. This allows more freedom in the way face-to-face teaching can occur as well as providing greater individuality in presentation.

New forms of assessment can be tried, some of them automated, including arrangements that mirror the workplace environment and better prepare the learners for the "real" world. Chat sessions on set topics are easily established and work very well in the areas of mathematics and science where students can bounce ideas off each other while the teacher

takes a less active role. Staff and/or parents at various levels can monitor cooperation and peer interaction of this type, guest specialists may be involved, and interaction with other schools or other countries/cultures can be arranged.

Greater flexibility of delivery allows a whole new direction in the learning experience. More individuality, greater control by the learner as to outcomes and more ownership of the process combine to improve the outcomes and build confidence as well as life-skills. Bringing about this development though, has required some effort at change management.

5.3. Managing the Change

As can be imagined the concept of placing together into a very visible location, learning content, methods of assessment and the actual assessments given has been a major change in thinking for some educators. Issues of responsibility and professionalism have been highlighted. It as a new and sometimes a worrying idea to think that students can access the curriculum they are to be presented with while at the same time shown ahead of time what outcomes are planned and how those will be assessed. Initially some staff were worried that they could no longer "hide". Some too, were concerned that parents and students would be critical of their programs or would choose programs offered by alternative staff who might have "lighter" programs.

In the event, as is often the way with change, few of the fears expressed have been realised. Considerable technical and writing assistance was provided initially to staff so as to get their material published. Some support continues, though most staff lean towards maintaining their own work.

Concerns over increases in workloads have similarly proved groundless. While in the early stages the "safe" players tend to double handle "just in case", the platform on which we operate, because it is both simple and conventional, has quickly given confidence. Again, adequate starting support (and a few well placed financial bonuses) was important in getting the change started. Special assistance was offered in the early stages to staff identified as natural leaders. These could then be relied upon to help encourage others.

With most content and process on view, there is not the level of unnecessary email that has been seen, especially in tertiary institutions, when material has been put "online". Initial fears of flooded email intrays has not resulted, especially where staff have provided clear instruction and support material. Again, the level of learning design support that is offered to staff is important. A sound bases for course construction saves much time and anguish at later stages.

In all areas, staff and students have been encouraged to question learning material, assist with its preparation and presentation – much of the web material is maintained by the students on behalf of staff. Wherever possible and as much as possible, all stakeholders have been encouraged to participate in decision-making as to design, content and appearance. Parent forums, staff-student training days, evening problem-solving suppers and various other arrangements have been provided to assist with this.

Certainly for us, one of the most powerful agents of change has been the student themselves. While adolescents are not known for their desire to have mum and dad see their results first hand, they are very ready to offer advice and technical support to computer based projects. By involving them in the technical and content areas, they have generally been far more accepting of the visible information issues than might otherwise have been the case.

5.4. Quality Control

One of the anticipated outcomes of implementing a student management arrangement of the type Corskill and ELTHAM have developed is that of quality assurance. In a learning environment where the learning transaction is rather transparent, where material to be developed is visible alongside assessment processes and results – there exist certain checks and balances.

An important feature of the SLMS has been its linking of outcomes, material and assessment within the context of easy communication with the educator. Such openness was initially (for some, more than that) something of a challenge to staff. Fortunately, ELTHAM is blessed with a particularly dedicated staff and most saw quickly the value of opening their program for comment, analysis and evaluation. In our environment of flat managed teams openness was paired with mentoring and peer review. Teaching has become more of a team consideration with parents and students viewed as part of the team rather than as recipients.

This is an important step in reshaping the learning context as well as a means of providing ongoing evaluation and quality control. Staff are more often asking themselves why they teach what they teach when they are working within a context of transparency. Self-evaluation, peer review and collaborative learning have all been enhanced, and will continue to be constantly reviewed and enhanced in the future.

In the post-compulsory context, the role of parents is naturally reduced. However, the value of openness, with its peer review and collaborative learning corollaries, remains. Learning needs to be both visible and logical for the learner to form clear views as to the value of learning generally, of specific learning materials and of the value of the intermediaries concerned. Where these are all clearly visible, attitudes to learning and willingness to become a life-long learner (and thus, incidentally, of more economic benefit to the learning institution) will be more positively developed.

5. Technical Considerations

The basis for the SLMS depends very much on existing software's. In most cases, educational institutions will be

committed to expensive business software systems. These may or may not incorporate elements of a student records managing type. To cope with these problems at ELTHAM we chose a software development that we could use as a basis to design our own community. Based on MS Access, this software is simple and very adaptable.

A primary requirement of any modern application of technology to education is a stable platform on which to build. There are some important considerations in this regard. If Australia is anything to go by, and I do realise we are perhaps more insular than our European cousins in some ways, lack of comprehensive forward planning has been a key problem for educational institutions.

This is not the criticism it might sound. One difficulty already mentioned is the speed at which technology changes. Add to this the size of many Universities and schools as well as their diversity as well as commercial considerations, and planning of integrated technologies becomes something of a nightmare. However, it must be done. Technology is too expensive to allow funds to be allocated without it. For these reasons, technology is often viewed by management as something of a "black hole" in their budgets. Money disappears into that hole with frightening rapidity but not much in the way of visible result can be seen.

6. Conclusion

In conclusion, the models established by ELTHAM and Corskill are based firmly on the premise that no institution can provide economically, all of the learning materials need by their clients. Further, it is assumed on the basis of the comments above, that learning best takes place in a complete ecology of learning where intermediaries, stakeholders, materials and specialist skilled intermediaries share the burden of collecting, sorting, evaluating, interpreting and assimilating the information found to be most suitable. While technology can often overwhelm, it is possible to harness it in such a way that the best possible learning outcomes can be realised.

As with any workable knowledge management scheme, that implemented at Eltham College functions in relationship to its ease of use and value to the user. By making required materials and functions easily accessible, the various players are encouraged to participate and the vehicle quickly becomes also a means to its own growth.

Change has been facilitated by a steady emphasis on ease of use as well as a systematic program of involvement at many levels. Without this move to involve people from where they are (or were) we could not have expected the level of involvement we can now enjoy.

Returning to our starting point … what we have attempted to achieve is a technology application that might not be biggest or best but which is manoeuvrable. Firstly, we should be able to navigate through the knowledge economy iceberg field. Secondly, we have attempted to navigate out system according to the best possible sources of information, learning from the mistakes of others and profiting by them. In this regard, the Delphi studies have been enormously helpful in identifying future directions. What we hope to have achieved is a vehicle, a ship if you wish, that will enable a safe and sensible journey through the ice fields. There are lifeboats aboard – we still rely principally on real live teachers and their teaching skills. Steering our ship is not the task of a single captain but of a unified learning team made up of all the stakeholders – all of those who are most interested in keeping our ship afloat.

Finally, it is important that the learner themselves can see learning as valuable, even exhilarating, so that a realistic outcome of life-long learning, a learning that can provide success in a changing world, is a possible outcome. At ELTHAM, we have a fair bit of fun on board the good ship Education.

Further information

More information on the SLMS and its philosophy together with copies of presentations on this subject, can be found at http://www.elthamcollege.vic.edu.au/arthur/infosystems_home.htm

Demonstration sites

http://corskill.com.au/Cor_Website1/

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