

Practice Versus Potential of Knowledge Management in Schools

Abstract: The topic of this paper is 'knowledge management' and its potential value to the learning organisation where information is often undervalued, fragmented and unrealised, resulting in enormous amounts of duplicated and even conflicting efforts. Organising the explicit and implicit knowledge out of 'silos' and into a shared system requires a whole school policy of collaboration. This presentation will examine the value of knowledge management to your school when a deliberate process for sharing and storing is implemented.

'The application of information communication technologies (ICT) to the processes that support learning promises to deliver improved learning outcomes and administrative and management efficiencies.'
MCEETYA 2003

Introduction

As schools embrace the innovative technologies emerging in the education sector, the interpretation of the statement above will invoke a range of emotions depending on your relationship with information and communications technology (ICT). While the concept of 'knowledge management' is not dependent on the use of ICTs, it is the potential of technology that is transforming the way our schools are interacting with and managing data, along with the increased expectations being placed upon them. These increased expectations require a 'knowledge management' strategy.

Knowledge management, broadly speaking, is a deliberate process for the capturing, sharing and reuse of knowledge and experience. It's true strength and value lies in the emphasis on people, not technology. It's about the development of policies and practices that assist the whole learning community to share their own knowledge and experience with colleagues. It's about placing value on many routine daily practices and attempting to ensure the right knowledge is in the right place, at the right time, in the right context to be able to serve a purpose. Over and above all this, it's about collaboration. To quote the automobile manufacturer, Henry Ford, 'Coming together is a beginning; keeping together is progress; working together is success.'

Learning organisation knowledge framework

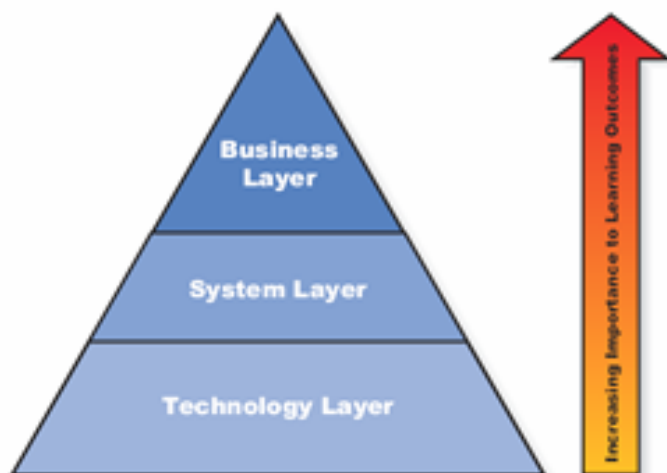
In 2003 (p.5), the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) produced the 'Learning in an online world: learning architecture framework'. The purpose of this document is stated as being, 'to provide effective educational support structures in response to the challenging demands of contemporary learning.' The concept of Learning Architecture is presented as a three-level model (Fig.1). The technology layer being the base upon which the system and business layers are supported.

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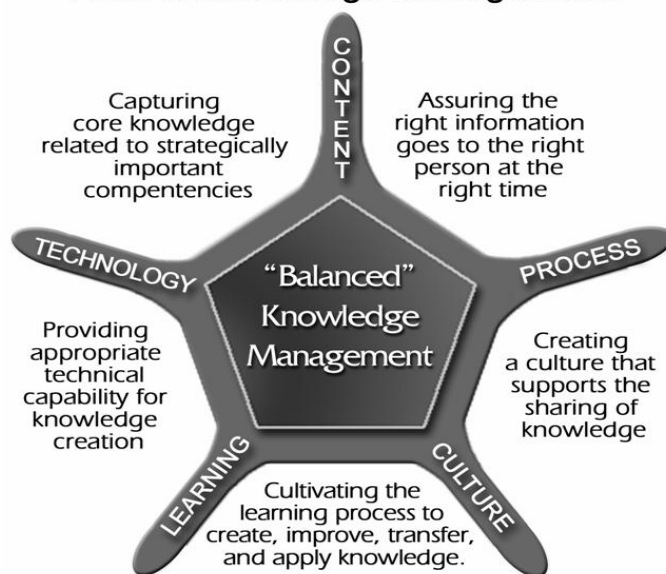


- **Business layer** describes the vision, objectives, drivers, key functions, processes, organisations and their relationships.
- **Systems layer** describes the information and applications that support the business level.
- **Technology layer** describes elements such as hardware and networks, integration and security facilities that support the systems level.

Fig.1: Components of Learning Architecture

Historically, schools have focused primarily on the technical systems that collect, organize and disseminate the organisation's quantitative data. As the diagram illustrates, however, the technology layer is only the foundation that rests underneath the system and business layers where the greatest value to learning outcomes is to be achieved. The systems layer typically carries all the curriculum material, student data and activity; the business layer is, as the name suggests, the major management level.

What is Knowledge Management?



Generally speaking the philosophy of knowledge management is to:

- create and maintain a repository of organisational knowledge,
- create an institutional memory,
- gather, organise, distribute and make knowledge available throughout the organisation.

Fig. 2

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The knowledge management professionals, Acquisitions Solutions present it as a 'balanced' environment (Fig.2) with an equal interaction between content, process, culture, learning and technology which:

- Assures efficient information availability
- Creates a knowledge sharing culture
- Cultivates a community of learners with a strong learning framework
- Provides a stable technical base
- Captures the skills and competencies of individuals for improved learning outcomes.

Providing a definition

Knowledge management is, generally speaking, a business model that has only recently been applied to schools. Numerous definitions apply and are evolving further as the concept is applied to educational organisations. Examples are:

'Knowledge Management concerns the effective capture, utilisation and exploitation of human knowledge and expertise for business advantage. It involves planned decisions on how an organisation's 'know-how' should be structured, organised, located and utilised'. (IBM Consulting Group 1997).

'Knowledge management is a discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. The information assets may include databases, documents, policies and procedures as well as previously unarticulated expertise and experience resident in individual workers. (Gartner Group in Butler 2000).

'Knowledge management is the process by which a school achieves the highest levels of student learning that are possible from its intellectual or knowledge-based assets'. (Bukowitz and Williams, 1999)

Knowledge management includes knowledge creation, dissemination and utilisation for the purposes of improved learning and teaching and to guide decision-making and priority setting in every domain of professional practice. (Brian J Caldwell 2003)

Identifying knowledge

These definitions indicate that knowledge management issues include developing, implementing and maintaining the appropriate technical and organisational infrastructures to enable knowledge sharing. Considering the range of definitions, it is appropriate to identify 'knowledge'. Basically speaking there are two different types of knowledge 'explicit' or 'tacit'. **Explicit** knowledge consists of all that material that is filling network harddrives to bursting capacity. This information is the result of years of experience being added to some basic idea and turning into a curriculum document, a new procedure a folder of photographs or whatever. (Broadbent 1998)

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The vast majority of knowledge in our organizations, however, is **tacit**, hard-to-articulate, and held in peoples' heads. It is created and shared via direct person-to-person interaction, story-telling, and shared experience. It's that knowledge shared in a chat over morning tea, or even held in a head and not shared at all. While **explicit** knowledge is more easily managed and shared, **tacit** knowledge has potentially more strategic value being derived from particular circumstances and events and is thus unique and hard to imitate. Herein lays the value of having a network system that facilitates the process.

The DIKWE hierarchy

The degree to which data and information becomes 'knowledge' depends on what we do with it. This is based on an understanding of the hierarchical model used to describe the process of information management, namely: data > information > knowledge > wisdom > enlightenment. Initially this hierarchy used to conclude at wisdom, however, the final step enlightenment has recently been added to take wisdom (answering or understanding why), to a higher step of attaining the sense of truth, the sense of right and wrong, and having it socially accepted, respected and sanctioned - i.e. enlightenment (Sharma, 2005).

Think about this in relation to your own school. That letter home to parents advising of a planned school camp is not composed by the school secretary who has never attended a camp. It is drawn up, at least in part, by the coordinator who knows the particular requirements either through personal experience or information passed on. This is a simple example of capturing knowledge into a tangible document. Most of us could recall an experience where the person who holds information about a particular event or procedure leaves the school without laying down a line of succession. It is the ability to tap into the stored skills, experiences and memory that gives strength to a learning community. A learning organisation reaps benefits from having a mechanism which enables an individual's memory to be 'down-loaded' into an information system; so that everyone can continue to access that person's experience long after the individual has moved on. (Britton 1999).

A people centred approach

It can be seen from this that true knowledge management focuses on people. Where the human involvement is absent, it is merely data or information management. Professor Brian Caldwell (2003) emphasises the importance of targeting knowledge management as a human-centred approach that cannot be underestimated in value as, 'the capacity of a successful school will be determined as much by its intellectual assets or its intellectual capital as by its financial and physical capital.'

The challenge then is to capitalise on the personal and informational assets within the organisation to develop a climate of innovation and flexibility that will be of benefit. Think for a moment of the possible wealth of knowledge within your school. Where is it stored? On the intranet; the general drive; a teacher's personal webpage; in someone's head?

The brain drain

Schools make a significant financial investment in the expertise of their personnel. You may be aware of the professional development budget for your school. Is it providing value for money? When a capable and experienced teacher transfers to another school or even simply to another faculty, they leave a void that must be filled. They take knowledge of methods, resources, and a

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significant core competence with them. Often this also includes a significant financial investment in professional development and training. This void is more easily filled if a framework of knowledge remains from that teacher.

Gathering the organisational knowledge

Hardware and network sophistication is providing opportunities to "know what they know", to make maximum use of the knowledge held within the school community and develop an organisational memory. This knowledge is the organisational learning that already resides in many different places such as: databases, knowledge bases, filing cabinets and peoples' heads and is distributed right across the school.

It is useful to identify organisational knowledge as a commodity. This then gives it a value and establishes it as an asset to be registered alongside other mechanical and physical assets. Schools are involved in such a range of activities that are usually being carried out against the ticking clock of assessments, report writing, school camps and just general lesson preparation so that, unless a clearly defined process is in place, the business of systematically storing knowledge and experience is tossed aside as we rush to the next deadline.

Using the cycles to advantage

The cyclical nature of the operation of schools is a real asset in relation to developing a knowledge management strategy. The Antarctica is studied by Year 8 students in Term 3 each year, just as the Year 9 Camp and the Athletics Carnival occur routinely each year. With a philosophy of knowledge management in mind, the school's 'talent, skills, know-how, know-what, and relationships can be used to create wealth' or, in educational terms, 'to ensure learning' as a process of building can replace what is often a process of replacing what has 'gone missing' or simply cannot be found on the G: Drive. (Stewart, 2002)

Schools can adopt a process of continually building on a foundation for the purposes of improved learning and teaching practices. This is also a basis for informed decision-making and policy development making policy and procedures more accessible.

Dixon and Ross (1999) refer to the fragmented storage of organisational knowledge as being held within various internal 'silos'. Knowledge remains in these 'silos' unless a deliberate process for sharing and developing knowledge is implemented.

'If you have knowledge, let others light their candles in it.'

Margaret Fuller

Management of Information Resources

All Australian schools now have some form of computer network structure often built around a range of supporting software for timetabling, student data management, library management and so on. Some have elaborate Intranet and Systems Management software such as WebCT or Blackboard, while others have a simple file structure consisting of a General Drive, Admin, and Curriculum etc. Others, like my school, have something in between.

At St Joseph's College we have maintained an intranet for approximately 8 years and also run the SIMON school management software being developed by the

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Ballarat Catholic Diocese. Our school community has anywhere/anytime access to resources which is by and large taken for granted. This is as it should be as network resources can be accessed as required by members of the school community. There is much less reliance on students having to 'catch up with' teachers, or of waiting while a document is found in someone's personal folder.

The Information Common

My role could be described as managing what Kerrie Tanner refers to as the Information Common. As Network Resource Manager I have a broad overview of all the school systems with particular responsibility for the intranet and curriculum resource management and a general overall responsibility to keep it running smoothly. This is achieved in cooperation with the extemporary technical support we contract from local firm, Integrating Technologies Pty Ltd.

Tanner (2000) says that, 'The Common must become the information management hub of the school, where all of the information the school generates or receives is managed, organised and disseminated. Every part of the school needs to be networked to it, so that students, staff and parents, actual or prospective, can access it from anywhere, and at any time, when that information is needed'.

The difficulty lies in the shape of this Common. From my experience it is analogous to a recent mountain climbing experience I had in The Lakes District in England. You set off on flat ground looking up at your destination. You sum it up as a fairly big task, but a manageable one. It's only once you start the climb and think you are getting on top of it that you look over the rise and find there is another rise ahead. The actual practice of organising and developing a network and system of knowledge management that will provide strong support to the learning organisation is just like that mountain.

Knowledge management - a difficult business

There is no overlooking the fact that, being so closely focussed on humans, the process of knowledge management within any organisation is a difficult business. First and foremost, to have any chance of success, the nature and value of the concept must be understood by the school community. This requires:

- Development of a suitable model and structure,
- Development of levels of responsibility,
- Creation of a culture of knowledge sharing,
- Someone to do the job.

A process of identifying the knowledge to be shared is also essential. Generally speaking, the knowledge of our schools can be found in:

- Policy & procedure, documents,
- Technology - harddrives and email,
- Employees, behaviours and relationships,
- Organisational culture.

The knowledge interface

Tools are available, both commercial and in-house models as previously mentioned. However, the tools alone are not enough to support the preservation and distribution of knowledge at all levels within the organisation. There must be a human element guiding the development of the resources. It could be safely stated that this area of responsibility varies in almost every school and is a reflection of the evolving nature of the adoption of education systems technology.

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In many schools it has integrated with the changing nature of the role of the teacher-librarian.

Skyrme (2001) confirms that more than ever, the role of the information professional (traditionally the teacher-librarian) is to be the knowledgeable interface between the user and repositories of information whether internal or external, online or hard-copy. They act as pivotal links between people with queries and others who might have the solution, interacting and communicating with patrons, and helping them in a consultancy and advisory mode. Furthermore, he states that knowledge managers must take on an advocacy role articulating and communicating the value-added contribution that they are making to the organisation.

Changing roles of knowledge professionals

It is here that teacher-librarians have re-evaluated their positions as the 'caretakers of resources' and seeing that the new digital era presents a myriad of challenges and opportunities. How long is it since you checked what was on the menu in your school library (this is assuming that your school still retains the services of a teacher-librarian)? Hopefully you will find that your teacher-librarian possesses the skills the UK Government's Library and Information Commission (2000) listed as the necessary attributes for knowledge management leaders of the 21st century. These are to:

- be pragmatic evangelists,
- be persistent but humble,
- know the organization,
- be connected to the top,
- have a systems view,
- be intuitive,
- be risk takers!

Knowledge management within a school, however, is not one person's job. It benefits from a team approach with a variety of people bringing their perspective to it. Many schools have a dedicated Technology or Network Manager, however many, like myself share that role with other hats such as Head Teacher-Librarian. The Principal, the Curriculum and IT Coordinators, and KLA Leaders all have a major role to play. Teacher-librarians, as information professionals are familiar with the concept of resource management and are capable of setting up the framework and structures, developing good practice guides, and providing information management expertise.

School libraries today handle both digital and hard-copy resources as simply one in the same. The task of being involved in setting up a knowledge management process is therefore, in many ways, an extension of the existing practice. At a curriculum level, many of us are producing 'research guides' that draw together a variety of resources relating to a specific topic that are stored centrally and accessed by students. We have been producing these for a number of years now and can testify to their value in:

- Providing students with a starting point
- Keeping them on track
- Making best use of library or computer lab time
- Providing access to a variety of relevant resources.

Both students and teachers look to these as a starting point for research assignments. They have proven invaluable for beginning teachers and teachers

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moving between year levels who are provided with a base resource that they can use as it is or with modifications.

The simple process of putting a photo album of a school event up onto the intranet serves a number of purposes. It can be used for integration of incoming students, a point of sharing experiences after the event or even as a marketing tool.

Creating a learning environment

In explaining its stance on the relevance of intranet technology, the Department of Education, Training and Employment (2001) stated that 'although intranets by themselves will not enhance learning, they provide opportunities for teachers to more easily create a learning environment where students can become independent learners, critical thinkers and construct knowledge and ideas in new and compelling ways through the use of digital technology.' We have come a long way in the short time.

School management software has become so sophisticated in recent years that a focussed knowledge management approach to these resources benefits all members of the organisation. By getting information out of the silos and into shared network areas, we create the potential to:

- Familiarise students with unfamiliar resources,
- Offer opportunities for peer review and sharing, or examples of best practice,
- Provide signposts to learning and an idea of what's coming next,
- Give meaning and purpose to the project through a broader audience,
- Bring variety into teaching and learning as world wide examples of teaching best practice are linked electronically;
- Make life for newcomers easier as they can explore independently,
- Provide students with more control over their own learning with opportunities to revisit a learning situation anytime,
- Use the rotational nature of curriculum to constantly adjust, improve and develop teaching ideas;
- Provide more opportunities for pupil creativity in a new medium by catering for different learning styles and multiple intelligences;
- Facilitate authentic, real world learning experiences through linking to community and workplace organizations and home.

Supporting the development

Having seen the benefit of adopting a policy to knowledge management it is then appropriate to ask, 'If we build it will they come?' To this there is only one answer, a resounding 'NO'. It takes time and energy to build this type of resource. For many teachers it is an adaptation to change that they are managing quite well without. Many of these are the teachers who move from the school with all the information in their heads. Others will take the contents of the filing cabinet with them. The daily pressure of teaching, discipline, reporting, changed timetables and the list goes on make the pressure to learn a new procedure of simply doing something differently yet another stress. Support mechanisms must be put in place.

Communities of practice tend to form spontaneously through social interaction. They don't work well when mandated. They are susceptible to the human emotions and egos that can limit success; however, experience has shown me that where they are supported and moulded they will reveal their true value.

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Herein lays the challenge. Teacher-librarians are playing a role in placing value on the collective intelligence of schools through leading the development of knowledge management processes to support learning. Who's got the job at your school?

Developing a climate for sharing

The value of knowledge management is, I consider, most easily advocated by example. It's in the feedback you receive from students and teachers who have experienced the support of recommendation to a resource that ignites the interest. In most schools file saving practices have evolved that lock valuable documentation into the network accounts of individuals. Even the practice of network storing to a role folder can have a significant impact. For example, houseleader documents stored in a central location with access governed by network permissions, is preferable in facilitating role succession to finding it in various formats in a staff member's personal folder after they have moved from the role.

Some staff will be easily convinced of the value of the principles of knowledge management, others will doggedly hold on to practices that belong to a foregone era. Ultimately, the whole school benefits if every member sees that the value of a knowledge management solution lies in:

- the ability to reuse information to conduct work faster,
- the development of self reliance,
- the creation of a culture of sharing,
- the easier identification of new opportunities,
- the increased quality of resources and
- the increased volume of work achieved.

To quote Peter Senge:

'Sharing knowledge is not about giving people something, or getting something from them. That is only valid for information sharing. Sharing knowledge occurs when people are genuinely interested in helping one another develop new capacities for action; it is about creating learning processes.'

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