

KNOWLEDGE MANAGEMENT IN HIGHER EDUCATION

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I recently attended a conference in London where delegates discussed the role that knowledge management can play in higher education. Knowledge management is no longer only applicable to large companies, but needs to be applied in every organisation and institution.

Knowledge management as a management tool and research discipline was ignored until the early 1990s and only gained popularity after the influential work of thinkers such as Peter Senge, Thomas Davenport and Chris Argyris (Anand & Singh 2011: 926; McNeil 2011: 4; Sallis & Jones 2002: 115). In the current knowledge age the volume of information is increasing at a staggering rate. Knowledge management became important because society shifted to knowledge-based jobs and because organisations faced increasingly complex problems that can only be solved if applicable knowledge is immediately available (Sallis & Jones 2002: xii; McNeil 2011: 4).

Organisations came to realise the important role knowledge and knowledge management can play in the improvement of their products and services, and managers and leaders realised that the only way they can survive in today's challenging world of information overload and technological developments is to manage the available information effectively by using knowledge management projects and practices (Nejati, Shahbudin & Amran 2010: 2; Kalaiselvi & Uma 2010: 1). If "knowledge is power", as Sir Francis Bacon stated in 1597, managing it makes more sense now than ever before (Klein 1998: 86).

There are many definitions of knowledge management, but most boil down to the ability to manage both the internal and external information of an organisation in such a way that it can be used to make informed decisions (Nurluoz & Birol 2011: 203; McNeil 2011: 7; Petrides & Nodine 2003: 25). Managing knowledge means connecting people with the information they need to take action, when they need it. In other words, providing the right information at the right time to the right people (Kidwell, Van der Linde & Johnson 2001: 28).

Knowledge starts as data – raw facts and numbers that must be organised and put into context to become information. Information is not knowledge; only when information

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is combined with experience and judgement does it become knowledge. Knowledge exists in the core functions of an organisation, in its processes, technology, systems and infrastructure, and in the minds of the people working in the organisation. Knowledge includes insight, skills and wisdom, and the practices that enable people to use the available information to reach their goals (Kidwell, Van der Linde & Johnson 2001: 29; Petrides & Nodine 2003: 4).

There are two main types of knowledge: explicit and tacit. Explicit knowledge is knowledge that is articulated, written down and stored in documents and databases. It can therefore be transferred easily. Examples of explicit knowledge in organisations are strategies, methodologies, processes, patents, products, and services. Tacit knowledge is the knowledge and wisdom of a person and cannot be transferred easily. Examples of tacit knowledge are skills, competencies, ideas, experience, relationships with people inside and outside the organisation, as well as individual beliefs and values (Kidwell, Van der Linde & Johnson 2001: 29).

Knowledge management brings together three core organisational resources – people, processes, and technologies. According to Nejati, Shahbudin and Amran (2010: 1), organisations are increasingly seeking competitive advantage in the effective and unique use and development of knowledge. Effective knowledge management programmes are used to identify and leverage the know-how (the tacit knowledge) embedded in work processes, with a focus on how it can be transferred into know-that (explicit knowledge) and applied in the organisation (Kidwell, Van der Linde & Johnson 2001: 29). Tacit knowledge is a valued resource, and using a system that effectively manages tacit knowledge is crucial for an organisation's survival. According to Klein (1998: 90), the informal know-how of organisations is distributed in a "haphazard fashion" across the minds of individuals and in "a plethora of recording media, such as memos, books, voice-mail messages, paper files, and databases". Organisational knowledge can be lost when people leave the organisation and take what they know with them (Petrides & Nodine 2003: 13). People at all organisational levels must therefore be motivated to share with others what they know, or to document their knowledge in an explicit format. Tacit knowledge may also be obtained from business partners, providers, competitors, and clients (Arsenijevic 2011: 3169).

Knowledge management also refers to the mechanisms and processes that are used in the creation, collection, storage, retrieval, dissemination and utilisation of an organisation's knowledge (Nurluoz & Birol 2011: 203). Information and communication technology (ICT) provides the infrastructure to enable and support knowledge management processes and the sharing of information (Omona, Van der Weide & Lubega 2010: 83). Management must employ foundational technology, such as email, groupware, and discussion groups, but must also use new, innovative technological infrastructures to communicate with staff and stakeholders.

Although knowledge management can play an important role in higher education, it has not been sufficiently examined to establish its value for higher education institutions

until recently (Arsenijevic 2011: 3168; Kidwell, Van der Linde & Johnson 2001: 28; Kalaiselvi & Uma 2010: 1). Knowledge management is crucial for higher education practices because of the vast amounts of knowledge, in both academic and administrative contexts, that educational institutions accumulate. Education is about the creation and application of knowledge (Sallis & Jones 2002: xiv), in fact, knowledge is the key asset of academic institutions. Educational institutions should therefore be leading the way in making knowledge management a key part of organisational culture (Sallis & Jones 2002: xv).

McNeil (2011: 7) points out that the academic sector world-wide is currently forced towards being economically competitive; they must keep up with various political issues, with technological developments, with ways of finding funding, they must deliver effective marketing efforts, develop entrepreneurial skills, and many other skills not traditionally part of the academic world. It is expected from higher education institutions to teach to a wide demographic proportion of the population, and they must use teaching strategies which can be successfully applied to all student groups. New and innovative student assessment methods in accommodating the diverse student population must also be used (Petrides & Nodine 2003: 5). Managing the available knowledge can provide support to all these processes.

Higher education institutions are no different from business organisations in the handling of knowledge, and must use effective and efficient procedures to manage the knowledge in academic, administrative and human resources departments. Although most of the existing knowledge management frameworks have been developed for business organisations, higher education institutions can successfully apply these frameworks in their own environments (Omona, Van der Weide & Lubega 2010: 83).

There are two types of knowledge involved in higher educational settings: academic knowledge and organisational knowledge. Academic knowledge is the primary purpose of tertiary institutions and within each discipline lays a wealth of existing and undiscovered knowledge that must be managed. Knowledge management practices can provide a framework for distributing research outputs, teaching practices and effective procedures to improve educational outcomes (Nurluoz & Birol 2011: 20).

Organisational knowledge refers to the knowledge of the overall business of the institution: information about administrative and organisational practices, the management of students, staff and resources, the markets it serves, and the factors critical to the success of the institution (Coukos-Semmel 2003, in Kalaiselvi & Uma 2010: 2). Each higher education institution is unique in its scope, size, and priorities, with its own business practices and its own unique group of students (McNeil 2011: 10). Managing the knowledge of the institution in such a way that it can be available to other higher education institutions can contribute valuable information to government and policy makers to ensure higher standards and quality teaching at all the institutions of a country.

TECHNOLOGIES AND KNOWLEDGE MANAGEMENT

Because education becomes more and more technologically empowered, and because of increased interconnectivity with the rapid growth in the development and application of wireless and mobile technology, higher education institutions are under constant pressure to manage information and the flow of knowledge using the technologies available (Omona, Van der Linde & Lubega 2010: 83; McNeil 2011: 7; Kalaiselvi & Uma 2010: 1). Using knowledge management technologies effectively can lead to better decision making, more effective curricula development processes, successful research, improved academic and administrative services, and reduced costs.

Knowledge management technologies must be able to support and facilitate processes such as the capture of knowledge, knowledge storage, data mining, information retrieval, information sharing and collaboration, and the dissemination of knowledge (Omona, Van der Linde & Lubega 2010: 83). Many educational institutions over the last ten to 15 years have invested heavily in technology in order to generate data that can improve both the knowledge outputs and the success of the organisation. The problem is that technology does not necessarily improve outcomes if the institution does not have the necessary knowledge management systems in place to effectively integrate the technologies into shared decision making processes (Petrides & Nodine 2003: 7).

For example, an intranet is a network that exists exclusively within an organisation and is based on internet technology. It can provide an email system, group collaboration tools, an application sharing system and a company communications' network. Some traditional applications of intranets are access to databases; a forum for discussions; distribution of electronic documentation; and it can be used to provide online training.

Higher education institutions can participate in text-based conferencing channels through which individuals can share knowledge and information. Usenet newsgroups can be used to discuss various topics with colleagues at other universities. Chat tools allow people to hold live interactive conversations, while discussion groups can be set up on a variety of topics to enable internal and external knowledge sharing.

Web 2.0 is currently seen as a driver of the knowledge and network economy. Web 2.0 provides the following applications that can effectively be used by higher education:

- Blogs: online journals that can be used to share knowledge. Blogs can also exist internally within an organisation and can act as an alternative to face-to-face meetings;
- Syndication and RSS feeds: technologies that can be used to alert users to new content on the Internet. Users can initiate the RSS button to receive new material as soon as it is posted;
- Mashups: a way of combining data and applications to make these applications more valuable to the user, and to provide access to applicable information;

- Wikis: web pages that can be viewed and modified by anyone with access to a web browser. Wikis can be used as repositories of knowledge, composition systems, media for discussions, or mailing systems;
- Online social networks: Internet communities where individuals can interact with others in the community through their profiles. The most popular social networking sites include MySpace, Friendster, Facebook and LinkedIn. Social networks are used by many tertiary institutions to communicate educational material with students. Facebook recently announced “Blackboard sync” – an application that replicates Blackboard to enable students to get communication from their lecturers on their Facebook profile;
- 3-D virtual worlds: computer-simulated online worlds where users interact in real time through “avatars”. Second Life is used by both the education sector and businesses as a platform to provide training and practical experience;
- Groupware tools: encourage collaboration and enhance knowledge sharing. Groupware tools include collaborative writing and whiteboards, computer-based conferencing, schedule meetings, diary organisers and email systems;
- Desktop videoconferencing (DTVC): a means for people to see and hear each other from their desktop computers, enabling them to collaborate and share knowledge;
- Expertise yellow pages: a listing of all the employees in an organisation, with a summary of their knowledge, skills and expertise;
- E-learning: the generic term used to describe online learning, computer-based training and web-based training. It is the application of Internet technologies to support the delivery and management of learning, skills and knowledge; and
- Visualisation: a way of storing information that allows users to understand the complexity of information through the use of rich computer graphics. Data in an information retrieval system can be represented and modelled in 2-dimensional (2D) or 3-dimensional (3D) scatterplots.

All and all, education is about knowledge. Applying knowledge management and appropriate technology in higher education will make more information more accessible, will support teaching, research and learning, and will support everyone, from top management down to administration departments with quality, applicable information where they need it, when they need it.

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