Knowledge management for sustainable growth and development: Implications for higher education

by

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Abstract

Tertiary institutions should support knowledge-driven economic growth strategies and poverty reduction, generate new knowledge and build the capacity to access existing stores of global knowledge and adapt that knowledge to local use. This study seeks to explore strategies and practices relevant to the implementation of knowledge management to bring about sustainable growth and development. The study employed the descriptive survey design. Convenience sampling was done to select 30 lecturers from tertiary institutions. Open-ended questionnaire was used as the data gathering instrument. The study found out that knowledge manufacturing is not rampant in tertiary education as there is scant research being done by the staff. Knowledge sharing and dissemination with various stakeholders is very low. There are very few links between higher institutions and private enterprises, non-government organisations and administrative structures and organisations yet these need researched knowledge to bring about growth and sustainable developments in their environments. The study recommends that tertiary institutions should employ digital library systems, establish schools of excellence in business, management, establish a network of higher education institutions to promote research for growth; establish Regional Centres of Expertise; collaborate with private enterprises, nongovernmental organisations and administrative organisations and establish of Community of Practice.

Key terms: sustainable development; knowledge management; tertiary institutions; education; growth

Background

The increased interest in knowledge discovery, knowledge management, and knowledge transfer can be attributed to many factors including the advances in information and communication technologies; data explosion and information overload; the expected significant loss in the workforce as the baby boomers retire; and, the need for organisations to better utilise their intellectual capital to stay ahead of the competition (Delen and Al-Hawamdeh, 2009, p. 141).

Higher education has come to occupy an important place in modern societies. Institutions of higher learning are the largest repositories of certified knowledge. They have the highest concentration of those certified as experts, as possessing specialised skills and knowledge which societies need for their advancement. They have produced and/or refined some of societies’ most sophisticated tools and ways of doing things. They are powerful institutions not only for these reasons but also because they produce most of the leaders of modern societies and maintain close links to society’s most powerful leaders. It is not surprising therefore, that higher education occupies a critical and revered position in Africa and the world and that dominant ideas emanating from it are quite influential (Okolie, 2003).

Society is entering into an era where the future essentially will be determined by people’s ability to
wisely use knowledge, a precious global resource that is the embodiment of human intellectual capital and technology. The knowledge-based economy places great importance on the diffusion and use of information and knowledge, as well as its creation. In this new economy, individuals and companies are obliged to focus on maintaining and enhancing their knowledge capital in order to innovate, and their ability to learn, adapt and change becomes a core competency for survival (Psarras, 2006, p. 85). According to Nomura and Abe (2010), ‘Pressures to respond to shrinking student populations, to compete in the globalized higher education markets, and to meet various social demands, are some of the key issues currently facing higher education (122).’

In the last decade, knowledge management (KM) has started to emerge as an area of interest in academia and organisational practice. The literature reveals a rapidly increasing body of knowledge relating to KM that covers many different disciplines and areas of interest to academics and practitioners (Nonaka, 1991; Wiig, 1993; Metaxiotis et al., 2002; Quintas et al., 1997; Davenport et al., 1998; Leonard, 1999). Although there is a recognition that knowledge is a key business asset, organisations are still in the early stages of understanding the implications of KM, while a fair percentage of senior managers believe that KM may just be embellished information management and business process reengineering (BPR) efforts; many BPR efforts have been failures, so there is a concern that KM may fall victim to the same perils. Current research (Nonaka and Takeuchi, 1995; Kim and Mauborgne, 1997; Rollo and Clarke, 2001; Bhatt, 2001) has shown that a knowledge-based company possesses information and knowledge that confer a special advantage, allowing it to manoeuvre with intelligence, creativity, and occasionally, cunning. It is well-prepared to sustain its growth and develop in a dynamic environment. By marshalling the skills and expertise of its members, it is able to engage in continuous learning and innovation.

While it is clear that in the new knowledge-based economy the demand for education and training will increase, it is not clear how the new economy will change how individuals and companies should best attain their educational objectives and how learning institutions can best satisfy the demand for knowledge. This paper comes to explore the applicability of KM concepts to tertiary education and training and proposes new ways of using KM for the development of modern education and training in the new knowledge-based economy. Toffler as quoted by George (2006, p. 591) was prescient in noting the now well-recognised international trend in employment from blue-collar low-skilled jobs, to white-collar highly-skilled employment, and the importance of widely diffused and ever expanding knowledge that contributes significantly to current economic growth. Changing trade patterns influence the productive possibilities of the economy and thereby the demand for education, the uses put to education, and the demands made on education for tailoring workforce to those demands (Riddell 1996, p. 1363). The most important economic development of our lifetime has been the rise of a new system for creating wealth, based no longer on muscle but on mind (Toffler 1990, p. 9). The norms, values, attitudes, ethics, and knowledge that tertiary institutions can impart to students constitute the social capital necessary to construct healthy civil societies and socially cohesive cultures (World Bank, 2002). In a concisely worded statement, a joint ECLAC-UNESCO documentation shifting education and knowledge patterns for production summarises the concerns of neo-liberal education strategists:

The educational function of the future cannot be carried out through a routine, hierarchical structure, with teachers who think like civil servants and a society which is indifferent to the education system’s financial needs. Autonomy, administrative responsibility, experimentation and close links with the community should be the features of all places where the education process is carried out (Quoted in Riddell 1996, p. 1361).

Tertiary education institutions, and entire tertiary systems must become increasingly agile in responding to changes in the labour market. A diverse system that includes a strong set of private providers and autonomous public providers of tertiary education affords the necessary flexibility (World Bank, 2002, p. 86).

Knowledge management: key issues

Knowledge management is based on applying the fullness of an organisation’s knowledge to its decisions and this requires working hard to represent it, transfer it, make it accessible and encourage its use. According to Quintas et al. (1997), KM is defined as the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities.

Basically, a company has to manage the change and allow the culture to move towards a structure, which enables the organisation to transform tacit knowledge into explicit knowledge; to develop the knowledge cycle and make knowledge available and accessible company-wide (Burk, 1999). Other authors have sought to take a process, rather than project based perspective to the definition of KM. Liebowitz (2000) presented a nine-step approach to KM:

1. Transform information into knowledge.
2. Identify and verify knowledge.
3. Capture and secure knowledge.
4. Organise knowledge.
5. Retrieve and apply knowledge.
6. Combine knowledge.
7. Create knowledge.
8. Learn knowledge.
KM is driven by the need to enhance: intellectual asset management; operational efficiency; customer and competitor intelligence; continuous improvement; organisational learning; innovation in products and services and time to market.

The process of knowledge management begins by relating to a defined organisational purpose or organisational need, knowledge inputs are examined within the organisation or in its vicinity, the existing knowledge, both internal and external to the organisation, is analysed and alternative activities are mapped. The processes of cooperation and transmitting accumulated knowledge and experience between members of the group creates new knowledge to be used for decision-making and activating the change. The process is accomplished through cooperation and sharing of knowledge between participants (Shoham and Perry, 2009).

In general, one of the most important issues in KM is the organisation, distribution and refinement of knowledge. Knowledge can be generated by data mining tools, can be acquired from third parties, or can be refined and refreshed. The collected knowledge can then be organised by indexing the knowledge elements, filtering based on content and establishing linkages and relationships among the elements. Then this knowledge is integrated into a knowledge base and distributed to the decision support applications. The insights resulted from the decision support applications are used to refine the existing knowledge and feedback into knowledge organisation.

Another important issue is the knowledge presentation. This refers to the ways knowledge is displayed to the organisational members. In general, an organisation may devise different procedures to format its knowledge base. Because of the different presentation styles, organisational members often find it difficult to reconfigure, recombine and integrate knowledge from distinct and disparate sources. A third key point is the knowledge distribution and sharing. We should always keep in mind that when knowledge within the organisation is shared, it becomes cumulative. Information technology and the Internet have enabled and increased this sharing of knowledge and new, emerging technologies can further advance it.

Why KM is receiving attention
Riege and Lindsay (2006), in their study of knowledge management, suggest four reasons why knowledge management is receiving increased attention: To
1. drive efficiencies;
2. develop new outdated systems to improve the overall performance and easier accessible knowledge base;
3. improve accountability and to mitigate risk by making informed decisions and resolving issues faster; and
4. deliver better and more cost-effective services and a higher level of responsiveness to the public and, thereby to demonstrate the responsible use of taxpayer’s money.

Knowledge management is thus a natural solution for improving operations and enhancing customer service in various organisations.

Conceptual framework: knowledge management
‘Knowledge management’ is a concept that was coined as an advanced management concept for the most important of all organisational resources’ intellectual capital. Financial organisations, computer companies and high-tech corporations recognised the tremendous importance of intellectual capital and believe that developing and investing in intellectual capital is the critical path for organisational success. Unlike the traditional assets of an organisation, the quality of an organisation’s knowledge is evidence of future ability to earn profits and maintain an ongoing relative advantage that distinguishes the organisation from its competitors. Organisations that understand the importance of knowledge learn to identify, map, nurture and preserve it.

Managing knowledge is different from managing other resources. It requires a different kind of thinking: thinking about thinking (meta-cognition) and breaking out of standard management frameworks. Unlike tangible resources, knowledge is very difficult to capture and define, not to mention manage. The concept “knowledge-rich organisation” is generally applied to hi-tech organisations even though the ultimate knowledge organisation has existed for centuries and it is none other than the university. Universities, by their very essence, were intended to meet exactly the needs that the prophets of knowledge management spoke of in the 1990s. For generations, universities have dealt with the creation and preservation of human knowledge through research and evaluation, in a society that places the highest value on physical and financial assets. In a knowledge society, where the most important assets are knowledge assets and human capital, instruction and education play a very central role; they are its core business (Shoham and Perry, 2009, p. 241).

Knowledge has been recognised as an important source of competitive advantage and value creation (King and Zeithaml, 2003). The concept of knowledge within knowledge management can be seen as both an object and a process. Knowledge as an object is active information which can be acted upon to generate value, whereas knowledge as a process involves the identification, dissemination and organisation of this knowledge to generate value in the achievement of the organisation’s objectives (Luen and Al-Hawamdeh, 2001). Knowledge management describes the strategies and processes of acquiring, converting, applying, and protecting knowledge to improve a firm’s competitiveness (Lin and Lee, 2006).
The growing importance of knowledge as a critical resource has encouraged all organisations in the public sector and private sector to pay greater attention to knowledge management and large organisations around the world have implemented knowledge management strategies, policies, and programmes.

Education for sustainable development

The concept of “education for sustainable development (ESD)” was discussed at the World Summit on Sustainable Development held in Johannesburg, South Africa in August-September 2002 and in December 2002, the United Nations (UN) General Assembly adopted a resolution proclaiming the period of 2005-2014 to be the UN Decade of ESD (UNDESD; United Nations, 2002). ESD aims at changing the approach to education by integrating the principles, values and practices of sustainable development, and needs to be incorporated into all forms of learning and education. ESD can assist individuals to change their behaviour so that environmental, economical, social and cultural sustainability can be realised in their respective societies (Matsuura, 2004).

Education for Sustainable Development consists of the following five elements (United Nations Educational, Scientific and Cultural Organization – UNESCO, 2005, p. 9). These are:

1. education that allows learners to acquire the skills, capacities, values and knowledge required to ensure sustainable development;
2. education dispensed at all levels and in all social contexts (family, school, workplace, community);
3. education that fosters responsible citizens and promotes democracy by allowing individuals and communities to enjoy their rights and fulfil their responsibilities;
4. education based on the principle of lifelong learning; and
5. education that fosters the individual’s balanced development.

Research Methodology

Research design

The research employed the descriptive survey design. It is argued in educational research that: ‘...descriptive survey is a method of research that describes what we see over and beyond’ (Babbie, 1997: 62).

Thus the researchers chose this method as it allowed lecturers to say exactly what they conceived of as the policies, procedures, strategies and practices that can be used to bring about sustainable development in Zimbabwe by higher education institutions. The study was largely qualitative by nature. It is argued that qualitative methods can be used to uncover and understand what lies behind any phenomenon about which little is yet known (Strauss and Corbin, 1990).

Sample and sampling procedure

The target population for this study were lecturers who were coming for weekend schools. The sample comprised of 30 lecturers who were conveniently sampled because the researchers needed information-rich cases. This study focused on respondents who had knowledge and lived experiences of higher education to include universities, and colleges and who were willing to take part in the investigation (Flick, Kardorff and Steinke, 2004).

Instrument

The open-ended questionnaire was used as the main data gathering instrument. It is argued that: ‘questionnaires and surveys can be used to gather either quantitative or qualitative data’ (Best and Kahn 1993: 202).

Open-ended questionnaires gave respondents an opportunity to elaborate on issues asked (Cohen and Manion, 1994). Open-ended questions provide a response format that gives respondents the freedom to provide answers which they care to make. The researcher then has to make sense of all the responses given, construct appropriate categories and then code the categories so that the data can be analysed. Open-ended questions are the most important questions on the survey by offering important and unpredictable insights into human behaviour (Burton, 2000). It is suggested that open-ended questions allow for more detailed expression of respondents’ views (Sander and Stevenson, 1999; Fung and Carr, 2000) and that qualitative information on the respondents is far more helpful than aggregated statistical data.

Procedure

The questionnaires were distributed to the sampled lecturers at the beginning of weekend school tutorials and were collected at the end of the sessions. This was done in order to give respondents enough time to answer the questions in full. Permission to administer the questionnaire was sought from the responsible authorities.

Data analysis

Data were analysed using qualitative content analysis. To ensure accurate interpretations and analyses, the researchers examined responses from the open ended questionnaire to come up with the main themes. Overriding themes were generated. Content was analysed following the research questions.

Results

Strategies to implementing KM for sustainable development

The use of digital libraries

Respondents were of the opinion that the use of digital libraries is an effective strategy of knowledge management. They suggested that digital libraries should: include all those learning resources which are relevant; classify the resources into logical categories; develop a knowledge vocabulary, including a
thesesaurus; create indexes and search mechanisms; and constantly refine the classification categories. Knowledge management refers to a collection of processes, technologies and principles that serves to promote a learning environment supportive of the research community’s goals. One of the most important innovations in the application of KM to education is digital library (Sharma and Vishwanathan, 2001; Papadakis et al., 2002; Joint, 2003). A digital library is a computer-based system for acquiring, storing, organising, searching and distributing digital materials for end user access. Wang (2003) argues that integrating a digital library into an e-learning environment requires considerable knowledge-building on the part of the organisation involved.

The digital library’s greatest contribution is in the enhancement and increased value of the learning/educational process that results from the combination of digitally delivered content with learning support and services (Waller and Wilson, 2001). Consequently, an effective e-learning digital library can provide the infrastructure for supporting the creation, assimilation and leverage of knowledge. Nowadays, main elements adopted by digital libraries include employing the KM approach, such as collaboration tools, retrieval and navigation tools and knowledge-based systems (Srinivasan, 1998; Fullerton et al., 1999).

**Creation of learning organisations in tertiary institutions**

The respondents stressed on the need to create learning organisations to enhance sustainable development. Concerning students’ demands about work-related or action education/learning, the authors propose the creation of “learning organisations” in tertiary institutions. A learning organisation is one which has a climate in which individual members are encouraged to learn and to develop their full potential; extends this learning culture to include customers, suppliers and other significant stakeholders; makes human resource development strategy central to business policy; and is a continuous process of organisational transformation.

A learning organisation works to create values, practices and procedures in which learning and working are synonymous throughout the organisation. Some of the most important features of such an organisation in a university are that it is business-oriented, company-structured and closely linked to the marketplace and the general business environment, education and marketplace/business should be flexibly linked. It aims to “sponsor” the continuous development of its students’ core competences through their participation in big research and consulting projects. Problem-based learning and project-based learning – as parts of lifelong learning and action learning – are of high priority for a learning organisation. It seeks co-operation and partnerships with large international companies and other learning organisations in the framework of research programmes or consulting projects, in order to exchange know-how, experience and innovative ideas and then transfer it to its students (“employees”).

It gives increased emphasis on knowledge capture, storage, sharing, retrieval and use. Examples of all these activities which are implemented in a learning organisation are: research, students’ participation in international conferences, publications, development of knowledge repositories such as libraries, knowledge databases (including presentations, project proposals, research reports, manuals, lessons learnt, best practices), knowledge networks, expert systems for specific problem-solving and knowledge dissemination and retrieval, multimedia e-mail system, team working, face-to-face discussions, brainstorming and work group meetings. New forms of Masters and PhDs by research are developed by a learning organisation. They have a more business orientation and include necessarily project work, in order to narrow the current gap between the needs and expectations of the academic and business worlds.

In all the above underlies the effective operation of the learning organisation in a university as a business, where work is viewed as part of a “progressive” curriculum and not just a paid employment.

**Establishment of communities of practice**

The process described as the activity of a “Community of Practice” is a mechanism of learning, knowledge management and change management. A majority of the changes (learning) that result from this process are first-degree changes (learning) some are of the second-degree changes (learning) and a few are of the third-degree. These concepts, as described by (Fox 2001; Levy 2000; Watzlawick et al., 1974; Argyris and Schon, 1996), relate to the different levels of changes and learning. There has been much discussion on the notion of community, and in particular the idea of communities of practice (Lave and Wenger, 1991). The concept of a community of practice refers to the process of social learning that occurs when people who have a common interest in some subject or problem collaborate over an extended period to share ideas, find solutions, and build innovations. Respondents had this to say:

We need Communities of Practice, in higher education, where the knowledge and learning management processes occur, consisting of representatives from all of the universities. They can be either voluntary entities (not legally mandated) that grow naturally out of the members’ work or obligatory, legal entities that are established by the Zimbabwe Council for Higher Education (ZIMCHE) or another relevant government agency. They are cooperative frameworks that bring together professionals in a variety of fields (for example: research, senior administration, library, computerisation, e-learning, human resources), with similar seniority.
Leadership of the communities rotates between the representatives of the different universities who serve as chairperson for a given period and assist with the organisation of meetings and activities. The committees function as expert Communities of Knowledge whose goal is cooperation for the purpose of facilitating the best possible implementation of the tasks for which the members are responsible and achieving the universities’ goals. While promoting the purposes of each organisation (university) this framework also brings together change agents from across the higher education system. They meet for on-going activity at regularly scheduled intervals, by demand or as necessary. This process of knowledge management used by the inter-university Communities of Knowledge is a mechanism for change that enables the universities to adapt themselves to the environment using a process that includes mapping and analysis of knowledge, cooperation and collaborative learning (Shoham and Perry, 2008).

Creation of knowledge management strategy and policy

Respondents’ attitudes are well-represented by the following quote: ‘We do not have a specific knowledge management policy to deal with the systems that we use, the infrastructure that we might have such as the IT systems.’

The title (knowledge management strategy) is of little significance. What is important is a strategy, under any title which serves the same aim of ‘getting the right knowledge to the right people at the right time and helping people share and put knowledge into action in ways to improve an organisation’s performance’ (O’Dell and Grayson, 1998, p. 4). This points to the need for knowledge dissemination in universities.

Collaboration with private enterprises and other organisations

Respondents were of the feeling that: Knowledge management requires higher education institutions to have a close link with private enterprises so that theory is put into practice. A close link with non-governmental organisations and other administrative bodies work smoothly towards knowledge dissemination for sustainable growth and development. We can only see changes in the water that we drink if researchers on municipal services share the knowledge with the service provider.

Private enterprises have various ways of knowing, including the lived experiences of the targets of development (Okolie, 2003). Sustainability can only be achieved if researchers enter into dialogue with local communities. This requires, among other things, that institutions of higher learning interrogate indigenous knowledge and practices of sustainable development and articulate them with existing scientific and technological knowledge in order to generate policies and programmes that are Africa-centred, and acceptable to the local peoples. They should also change their attitudes towards indigenous knowledge by promoting the notion of multiple knowing, ending the placement of knowledge into hierarchies and the distinction between knowers and subjects. They should see the local peoples as the end result of development knowledges, policies and practices.

Becoming true centres of critical inquiry into knowledge

It was noted by the respondents that: To be truly participatory, research geared towards improving knowledge management in Africa should take place in Africa and involve dialogue between local people like farmers and scientists. Indigenous knowledge is the body of knowledge accumulated by a group of people (not necessarily indigenous) “who by centuries of unbroken residence develop an in-depth understanding of their particular place in their particular world (Roberts in Dei 2000a, p. 71). The goal should be sustainable development practices for improvement that can be sustained over time across generations. Development cannot be sustainable unless it is participatory. Participatory development is not the same as asking local people what they think about what experts recommend for them or, worse, trying to convince them or include them in the effort to convince them, to choose what the experts recommend. It should involve asking local people what they think good social transformation should be, what changes they think they need, how they think they can get them, and what assistance they might need in doing so. It should be about focusing on local conditions and working with the local people to meet their needs while protecting the ecosystem (Okolie, 2003).

Enacting development policies and programmes that work

Development policies and programmes are shaped by specific knowledge forms, worldviews and lived experiences. People may disagree on specific policies and programmes but if they agree on the premises and rationale that those policies and programmes embody, then their disagreement, while important, is somewhat superficial. Having contributed to the marginalisation, inferiorisation and exclusion of traditional knowledge and ways of knowing in the discourse and practice African development, including food production, higher education can contribute to a reversal of this approach and towards true improvement in Africa’s rural communities. Higher education should examine the extent to which the idea of development promoted by development agencies and governments is informed by the wishes and thoughts of local communities. It ought to examine the source of the knowledge that informs what is imposed on or prescribed for Africa.
Establishment of schools or centres of excellence

Respondents were of the opinion that, schools of excellence in business, management, among others, should be established in order to improve knowledge management skills in various aspects of society. Schools or centres of excellence assist in giving knowledge that is relevant for sustainable development. Centre for Excellence has been used by organisations in just about every sector of business, media, governance and education across the world. Sometimes it is simply a promotional self-aggrandisement; sometimes it is a highly prestigious award from government or an international body. The idea of Centres for Excellence in Teaching and Learning was first announced in the UK Government’s 2003 White Paper entitled ‘The Future of Higher Education’. One of the aims of the initiative was to invest in the practice of knowledge management and sustainable development by Geography research students. Being labelled a ‘Centre for Excellence’ can bring enormous rewards, great professional satisfaction and enhanced credibility within the sector and with potential partners and clients (Dyer, Selby and Chalkley, 2006).

Establishing a network of higher education institutions to promote research for growth

Institutions of higher learning should establish a network where conferences are the order of the day. At such conferences, themes to do with sustainable development can be included so that research in crucial areas receives close attention. Conferences held by various colleges and universities promote intellectual growth and development and this cascades to sustainable development. Tertiary education institutions support knowledge-driven economic growth strategies and poverty reduction by training a qualified and adaptable labour force, generating new knowledge and building the capacity to access existing stores of global knowledge and to adapt that knowledge to local use. Tertiary education institutions are unique in their ability to integrate and adapt that knowledge to local use. Tertiary education across the world. Sometimes it is simply a promotional self-aggrandisement; sometimes it is a highly prestigious award from government or an international body. The idea of Centres for Excellence in Teaching and Learning was first announced in the UK Government’s 2003 White Paper entitled ‘The Future of Higher Education’. One of the aims of the initiative was to invest in the practice of knowledge management and sustainable development by Geography research students. Being labelled a ‘Centre for Excellence’ can bring enormous rewards, great professional satisfaction and enhanced credibility within the sector and with potential partners and clients (Dyer, Selby and Chalkley, 2006).

Conclusions and Recommendations

Research support services for lecturers must be put in place so that they play their roles in the knowledge management process effectively. There is need to support the academic staff through holding regular workshops with them on various aspects of research as the source of knowledge creation and management. In addition, forums like workshops would afford the lecturers time to share research experiences and, in the process, learn from one another. Where possible, the institutions could periodically invite experts in knowledge management to address lecturers so that they realise how higher education can bring about sustainable development in the Afrocentric context. High levels of participatory research should be encouraged so that indigenous knowledges can be co-opted in the struggle to bring about sustainable development. Universities and colleges should work in partnership with private enterprises and non-governmental organisations to target at local but futuristic development.

References


