

# THE ROAD TO THE INFORMATION AND KNOWLEDGE SOCIETY: INDIGENOUS KNOWLEDGE AND THE MILLENNIUM DEVELOPMENT GOALS

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## ABSTRACT

Benefiting from the process of globalisation and becoming an information and knowledge society has become the vision for many governments throughout the world. However, becoming such a society is much easier for developed countries as they already possess some of the prerequisite criteria to be classified as an information and knowledge society. These criteria include a stable economy, an efficient physical infrastructure, and an effective ICT infrastructure, to mention a few (Britz 2006; Holmner 2008). As many of the criteria of an information and knowledge society coincide with the eight Millennium Development Goals (MDGs), it is much easier and faster for these developed countries to achieve these goals and benefit from the global economy. For developing countries that are still experiencing a digital divide, these goals seem nearly unattainable. As the deadline for achieving the MDGs is only five years away, it has become imperative for developing countries to investigate other roads and possibilities to assist them in progressing towards attaining these goals at an increased speed. Utilising indigenous knowledge is one of these roads that developing countries are making use of to reach this destination.

## KEYWORDS

Developing countries, digital divide, globalisation, indigenous knowledge, Information and knowledge society, Millennium Development Goals

## 1 INTRODUCTION

The twenty-first century is characterised by new opportunities and challenges posed by the development of the information and knowledge society. This is a society that is transformed by the use of information and communication technologies (ICT), as these technologies are used by developed countries as a positive tool for development.

Developed countries such as Norway, ranked first on the Human Development Index (UNDP 2009), comply with the criteria for an information and knowledge society (Holmner 2008) and are reaping the benefits that ICTs can bring. These benefits include assistance in advancing education, broadening access to educational resources, building new skills and improving quality of education (GESCI 2008). By complying with the ICT criteria of the information and knowledge society, as well as other criteria such as a stable economy, high levels of democracy, a high standard of living, an efficient physical infrastructure and usable content, etc (Britz et al 2006; Holmner 2008), developed countries, particularly in Europe, are attaining the Millennium Development Goals faster and easier. According to the Millennium Development Goals progress report (United Nations 2007) Europe has already achieved, or is extremely close to achieving, the first goal of eradicating extreme poverty and hunger, the second goal, namely achieving universal primary education, the fourth goal namely, reducing child mortality, as well as the fifth goal, improving maternal health.

Unfortunately the progress towards attaining the Millennium Development Goals (MDGs) is very uneven and many of the targets are likely to be missed in the developing regions (United Nations 2010b). Developing countries are still in the grip of a digital divide and are faced with numerous barriers such as extreme poverty, inadequate physical infrastructures, and shortage in human intellectual capacity, to mention a few. These barriers prohibit developing countries from becoming information and knowledge societies (Holmner 2008) and prevent them from reaching the targets of the MDGs. An example of this is that developing countries are struggling to meet the first MDG of ending extreme poverty and hunger. While the share of poor people in the rest of the world is declining, the absolute number of the poor in South Asia and in sub-Saharan Africa is increasing (UNDP 2010). Reaching the other MDGs by 2015 seems just as unlikely for many of the developing regions, especially the sub-Saharan Africa and Southern Asia region. Currently, in sub-Saharan Africa, no country is on course to achieve all the MDGs by 2015 (UNDP 2010).

It is against this background that the author decided to write this article with two objectives in mind. The first is to illustrate that parallels can be drawn between the criteria of the information and knowledge society and various Millennium Development Goals. Attaining these goals will also result in societies becoming information and knowledge societies. The second objective, which builds on the first, is to illustrate that developing countries need to investigate other roads and possibilities that can help them reach these goals faster as the deadline is only five years away – one of these roads being the utilisation of indigenous knowledge. The methodological approach for this article will be a qualitative one. According to Creswell (2009:4) qualitative research is defined as “a means for exploring and understanding the meaning individuals or groups ascribe to social or human problems”. As qualitative research is used to acquire insight into people’s thoughts, behaviours, anxiety, ambition, way of life or lifestyle (Flick 2009), this approach has enabled the author to gain insight into the issues pertaining to

the information and knowledge society so as to explore and understand the relationship between the information and knowledge society, indigenous knowledge and the MDGs.

With these objectives in mind, the article is structured in the following manner: In the first part the author discusses the criteria that are needed for a country to be regarded as an information and knowledge society. This is followed by a discussion on the MDGs. In this section the author highlights the correlation between the criteria for the information and knowledge society and various MDGs. The article is concluded with a discussion on the role and importance of indigenous knowledge in helping developing countries attain the MDGs and, in so doing, assisting them in progressing towards becoming information and knowledge societies.

## 2 CRITERIA OF THE INFORMATION AND KNOWLEDGE SOCIETY

The ways in which the concepts information society and knowledge society have been defined and expressed in literature have attracted a fair amount of criticism, usually on the grounds of ambiguity or unsuitability. Although there are many projects and much research done on these topics worldwide, there has been little effort in defining these concepts and very little consensus on definitions has been achieved (Rohrbach 2007). To compound this problem, many of the existing definitions are deficient in their conceptualisation and, without a clear conceptualisation, it is difficult to decide whether countries have achieved information and knowledge society status or are still moving toward it (Hamid & Zaman 2008). A further point of criticism is that extremely few models and indicators have been developed to measure information and knowledge society status, especially within developing countries (Nassimbeni 1998; Hamid & Zaman 2008).

In her doctoral studies, the author addressed this problem and investigated the phenomenon of the global information and knowledge society as one of the opportunities presented by globalisation (Holmner 2008). After a detailed analysis of existing definitions of and criteria for the information and knowledge society, a new more comprehensive and operational definition was proposed. The author used this definition to construe criteria to measure information and knowledge society status as well as identify indicators that the stated criteria are constructed from. The following is the definition of an information and knowledge society as was proposed by the author (Holmner 2008):

A society that is reliant upon a sophisticated physical and ICT infrastructure for the **improvement of everyday living and working conditions**. A society that values the importance of information as a key to economic wealth and prosperity and where there is an increase in information-related activities, as well as an enhancement of human intellectual capability. The information and knowledge society ensures the freedom of information through the use of information and communication technologies. In such a society, modern information and communication technologies are **utilised** to achieve the **interaction and exchange of information between their local knowledge system**

**(tacit knowledge and explicit knowledge) and the global knowledge system (explicit knowledge) to create usable, relevant contextualised content and knowledge. This interaction and exchange of data, information and knowledge** will, in turn, ensure the respect of other people's beliefs, values, norms and religions due to the increase, and availability, of information regarding these aspects.

From this definition, the following seven criteria can be deduced (not in order of importance):

- physical infrastructure criterion
- spatial and technological criteria
- economic criterion
- social criterion
- political criterion
- knowledge criterion
- cultural criterion.

According to the first criterion, an information and knowledge society relies upon an elaborate physical transportation infrastructure, consisting of roads, motor vehicles, warehouses, railways, airports and harbours. This physical transportation infrastructure is often overlooked and underemphasised in earlier definitions, but it is crucial for the effective and efficient delivery of products and services. Secondly, a sophisticated ICT infrastructure, consisting of telecommunication cables, computers, servers and hosts and Internet service providers, is vital to facilitate the exchange and interaction of data, information and knowledge from the community's local knowledge systems and the global knowledge system. The third and fourth criteria within an information and knowledge society relate to the economic and social aspects of this society. Information is regarded as having economic value and can be utilised to promote human development in areas such as health, education, social services and commerce. This would lead to an increase in human intellectual capability and can lead to the economic improvement of daily working and living conditions. Fifthly, the use of modern ICTs within the information and knowledge society, will lead to the freedom of information that can lead to a political process characterised by increased participation in the political arena by citizens. This can be achieved through applications such as e-government, where the government is made more citizen-centred by providing citizens with easy access to accurate, consistent, and timely government information. The seventh criterion within the information and knowledge society relates to the exchange of data, information and knowledge. This is a constant process of interaction and exchange between the country's localised knowledge (indigenous knowledge) and the global knowledge system.

The community's local knowledge is unique to their specific culture and is the foundation for their local decision-making and problem solving in aspects such as, cultivation, medical care, food preparation, teaching and natural resource management. This local knowledge is mostly tacit and exists in the mind of the local people but can also be explicit when this local information has been codified and put into an electronic format.

The global knowledge system consists of knowledge that is beyond local and indigenous context and is explicit, as it is usually information in digital form. Hence, it is information that is not found locally, but more importantly, information that is not found within the developing community's context and, possibly, understanding. Information from the global system thus has to move from being outside of the local community's context to their local knowledge system where it is processed and contextualised so that it can be understood and used to improve the living and working conditions of the community. It is also important that information from the community's local knowledge system can move and be represented in the global knowledge system. In the globalised world, the content of the Internet centres on western ideas, knowledge, and traditions. Nonetheless, if nothing is done to encourage education in local knowledge, the generations of the future will without doubt not understand where they fit in, in the world, and perhaps lose the roots of their culture (Nanzhao 2001). The last criterion relates to the cultural dimension of the information and knowledge society. Through the above-mentioned interaction and exchange process of data, information and knowledge, the increase and availability of information about other peoples' cultures, norms, beliefs, and religions is improved, and this can lead to a mutual respect for one other.

Although these seven criteria are much more comprehensive than criteria deduced by other authors such as Martin (1988, 1995) and Webster (2002), it is further necessary to identify a wide-ranging list of indicators that these criteria are comprised of. Identifying indicators to quantifiably measure information and knowledge society status will finally address the problem pointed out by Hamid and Zaman (2008), namely that extremely few models and indicators have been developed to measure information and knowledge society status, especially within developing countries (Hamid & Zaman 2008; Nassimbeni 1998). Although these indicators and sub-indicators are very comprehensive, they are not all inclusive of all the possibilities to measure a specific criterion. It is merely the authors' intent to show how such criteria can be broken down into possible indicators and sub-indicators to quantifiably measure information and knowledge society status.

In the following section, the author will discuss the possible indicators and sub-indicators that the criteria of the information and knowledge society are comprised of.

### **3 INDICATORS AND SUB-INDICATORS THAT MAKE UP THE CRITERIA OF THE INFORMATION AND KNOWLEDGE SOCIETY**

#### **3.1 ECONOMIC CRITERION**

Although there is much more to the information and knowledge society than the means by which it earns its living, the economic stability of a society is of the utmost importance.

In the information and knowledge society, information is seen as an important economic factor, as a resource, service, product, and the basis of added value and employment (Martin 1995). This economic aspect of the information and knowledge society is supported by authors such as Britz et al (2006) and Machlup (1962). According to Britz et al (2006) knowledge has become the primary input in economic activities within the information and knowledge society, resulting in a new economy of information. This is an economy where modern ICTs have made it possible for information to be separate from its original physical carriers, allowing information to travel by itself and, thus, making it possible for more people to reach information. This new economics of information is considerably unlike the old economic paradigm and has resulted in many new opportunities for developing countries.

The author is of the opinion that for the above to come to fruition, a strong economy with a high gross domestic product (GDP) and low inflation rates is needed. This will enable the citizens to have a high standard of living and a good quality of life. The first indicator of the information and knowledge society is also supported by Spangenberg (2005) who is of the opinion that a growing and healthy economy can be measured by the growth in the GDP of a country as well as by the inflation rates of the specific country. The second indicator of the economic criterion is the standard of living of the specific country. The standard of living of a country is generally measured by standards such as income inequality, poverty rate, and the real income per person. This view is supported by Spangenberg (2005) who is of the opinion that these indicators are crucial to ensure a sustainable information and knowledge society. According to Calanag (2003), there is a close correlation between the economic development of a country and the development of information and knowledge societies. Through the development of a strong economy, people are provided with the opportunity for more and better employment opportunities. Thus, the third indicator of the economic criterion is work opportunities leading to better income/wage opportunities. This can be measured through the unemployment rate of a community or country. Therefore, the indicators of the economic criterion include (but are not limited to): high GDP rates and low inflation rates, high standard of living, which is comprised of low income inequality, low poverty rate and high real income per person, and lastly, low unemployment rate.

### **3.2 SPATIAL AND TECHNOLOGICAL CRITERIA**

Not unexpectedly, the ICT requirement for the development of an information and knowledge society is very extensive and sophisticated. This criterion relates to the technological criterion for the information and knowledge society discussed by Martin (1995) as well as the spatial criterion discussed by Webster (2002). This criterion must be considered in terms of time and space. Spatially, the physical location is no longer a barrier to accessing information. Through the use of remote access and networks, information can be accessed at any location and at any time (Goddard 1991). Martin (1995) stipulates that the force that enables the flow of information to offices, factories, schools, and educational facilities and to homes will be the technological infrastructure.

Van Adenhove et al (1999) are of the opinion that this technological infrastructure refers to the implementation of, amongst others, integrated broadband networks which will remove the barriers of time and space. Furthermore, it could be deceiving to look only at the network infrastructure when talking about the spatial and technological criteria of the information and knowledge society (Van Adenhove et al 1999). Except for the physical information infrastructure comprising cables, routers, etc, the availability of personal computers, servers, and Internet hosts also form part of this technological criterion. It can be seen from the above discussion that within an information and knowledge society a sophisticated ICT infrastructure is needed. This infrastructure is comprised of hardware components (personal computers, servers, Internet host, etc), software (operating and application software), physical network infrastructure (cables, routers, hubs, etc) and the skill and the ability to use these components. Hence, the indicators of the technological and spatial criteria include (but are not limited to): access and use of personal computers, Internet access and use, access to broadband service, and telecommunication penetration which is made up of the sub-indicators fixed/main line penetration and mobile phone penetration.

### **3.3 POLITICAL CRITERION**

According to the Tunis Commitment of the World Summit on the Information Society, the information society is reliant upon democracy, sustainable development, and respect for human rights and fundamental freedoms (WSIS 2003). Therefore, for an information and knowledge society to be successful, the society must have the necessary infrastructure and high levels of democracy to ensure freedoms such as freedom of access to information, freedom of expression and intellectual property rights. The information and knowledge society will furthermore support citizen activities in politics and power (Rheingold 1993). Through the availability and use of ICTs to promote freedom of expression and freedom of information, these rights will in turn lead to a political process characterised by increased participation and consensus. Accordingly, the indicator and sub-indicators of the political criterion include (but are not limited to): high levels of democracy, which is comprised of freedom of expression, freedom of information as well as intellectual property rights, and an increase in political participation.

### **3.4 SOCIAL CRITERION**

The social criterion has an impact upon all aspects of human life and is thus a very complex and extended criterion. Within an information and knowledge society, information is seen as an enhancer of the quality of life (Martin 1995). As a result of this it can be inferred that the first indicator of the social criterion is a good quality of life. A very important aspect of this quality of life is the importance of high-quality health prospects. The improvement in quality of life in terms of good health prospects can be measured by looking at three sub-indicators. The first sub-indicator is the mortality rates and life expectancy of citizens of the particular country, the second is the number of practicing physicians in the country, and the third is the total expenditure on health as a share of GDP.

The second indicator of the social criterion of an information and knowledge society is education opportunities. Within an information and knowledge society, effective education and training systems are vital to ensure economic competitiveness and social inclusion. Furthermore, education is, first and foremost, a fundamental human right, which is spelt out in Article 26 of the Universal Declaration of Human Rights (United Nations 1948). The article declares that ‘elementary’ education shall be free and compulsory, and that higher levels of education will be equally available based on merit. Thus, education is an indispensable means for effective participation in the information and knowledge society. This indicator is measured by addressing two sub-indicators. The first of these sub-indicators is the literacy level of the country and, the second, the amount of years of compulsory education in the specific country.

The third indicator of the social criterion identified by the author is the initiatives that are aimed at developing modern online public services and a dynamic environment for the citizens of the information and knowledge society. This indicator will include the following online initiatives: e-government (including e-voting initiatives); improvements in the health public service sector through e-health initiatives; and the importance of e-learning initiatives in a society increasingly based on information and knowledge.

A further aspect of the social criterion, discussed by Britz et al (2006) as one of the main pillars of the information and knowledge society, and identified by the author as one of the indicators of the information and knowledge society, is content that is usable and affordable. Access to information alone is not enough, and even being connected to the best ICT infrastructure does not, necessarily, mean being informed. To enhance the quality of life within an information and knowledge society, people need information that is usable. The sub-indicators of usable content can be deduced from Britz et al (2006) as follows:

- information that is affordable
- information that is timely and available
- information that is readily accessible
- the language of the information.

Thus, the author can conclude that there are numerous indicators that play a role in the fulfilling of the social criterion of the information and knowledge society, such as health prospects, education opportunities, modern public services and content that is usable and affordable.

### **3.5 CULTURAL CRITERION**

Of all the criteria mentioned above, those which entail changes in cultural values and morals are the most difficult to identify. According to Nassimbeni (1998), the information and knowledge society will serve the cultural enrichment of all citizens through diversity of content, reflecting linguistic and cultural diversity. Thus, the information and knowledge society will provide content of a diverse nature to cater for all cultures. Martin (1995) elaborates on this perception by adding that the cultural



value of information in the information and knowledge society will be recognised through the endorsement of information values in the interest of individual and national development. In an information and knowledge society, people respect others' beliefs, values, norms and religions and, through information about the particular aspect, a better understanding is created leading to cultural and language diversity. This sentiment was also re-iterated by UNESCO's declaration on preserving cultural diversity (UNESCO 2001). The declaration was born from a roundtable discussion of the WSIS, which was intended to analyse cultural development issues within the information and knowledge society. Some of the central issues identified were; the promotion of linguistic diversity on global information networks; the production of local and indigenous content on the Internet; and universal access to cyberspace. From these central issues, indicators of the cultural criterion can be identified.

Furthermore, the preservation of a country's cultural heritage is of the utmost importance within an information and knowledge society. According to Europe's Information Society Thematic Portal (2007): "Digital libraries make cultural resources more easily accessible and open new ways for people to experience their cultural heritage, and digital preservation helps keeping the past and the present for the future." ICTs can play an important role in providing access to such culturally diverse content. Through the use of modern ICTs, a nation's rich cultural heritage can be preserved through initiatives such as digital libraries, which can also be acknowledged as one of the indicators of the cultural criterion. This opinion is supported by the World Summit on the Information Society's (WSIS 2003), common vision of the information society. According to this vision, attention must be given to the special situation of indigenous peoples, not just to the preservation of their heritage and their cultural legacy. From this vision, the author can conclude that initiatives dedicated to indigenous people and their knowledge, thus indigenous knowledge initiatives within the specific country, can be identified as another indicator of the cultural criterion.

Seen from an economic perspective, the cultural diversity and heritage of a country can further be utilised to increase the international exposure of the country. Advertising and marketing these cultural treasures can increase tourism to the specific country. Increased tourism, in its turn, will lead to an improvement of the country's economic profile in terms of creating more job opportunities and reducing poverty. Thus, it can be seen that within an information and knowledge society, the indicators of the cultural criterion are many and varied. They include (but are not limited to): universal access to cultural content; digital libraries that can preserve cultural diversity; initiatives that protect the indigenous people of the country, their culture and their knowledge, and tourism that promotes and markets a specific country's cultural heritage.

### **3.6 PHYSICAL INFRASTRUCTURE CRITERION**

According to Britz et al (2006) many policy makers forget that the information and knowledge society is still underpinned by a reliable, and highly sophisticated physical infrastructure comprising of items such as airports, railways, trucks, roads, and warehouses.

As with the social criterion, this infrastructure and its deliverability are often overlooked and underemphasised: without a reliable infrastructure the dematerialised economy of the information and knowledge society would be of little use. The physical infrastructure is also directly related to economic development and very important for foreign investors as well as tourists (Foley 2005). Thus, within an information and knowledge society, a physical infrastructure is needed. Accessible airports, roads, railways and harbours, as well as modes of transport, are needed that can utilise this infrastructure and be used for transportation. Thus the indicators of the physical infrastructure criterion include (but are not limited to): accessible roads, the number of motor vehicles, airports and railways, as well as the number of warehouses.

### **3.7 KNOWLEDGE CRITERION**

The last criterion the author would like to address is the knowledge criterion. In the Okinawa Charter on the Global Information Society (2000:1), the G8 members renewed their commitment to include everybody within this society so that all can share in the benefits. Accordingly, the principle of inclusion states that “everyone, everywhere should be enabled to participate in, and no one should be excluded from, the benefits of the global information society. The resilience of this society depends on democratic values that foster human development such as the free flow of information and knowledge, mutual tolerance, and respect for diversity.”

Thus, a flow of information from the global information system to the community or country must be established and maintained for the country to benefit from the advantages of becoming an information and knowledge society. The author is of the opinion that the interaction and exchange of data, information, and knowledge from the country’s local knowledge system, with data, information, and knowledge from the global knowledge system is thus necessary for the country to become an information and knowledge society. Through this two-way communication process, local knowledge from the country is shared with the global knowledge system, where people accessing this information can learn more concerning the local country’s culture, heritage or religion. In this way, the local knowledge of the country can be preserved for generations to come, and mutual tolerance and respect for diversity can be stimulated. In the same way, the local country can access global knowledge from the global knowledge system and, by translating, analysing, and contextualising this knowledge, can utilise it to stimulate development.

Developed countries and communities use information to further their development. In order to make use of existing global knowledge, communities need sophisticated skills that enable them to analyse, translate, and synthesise global knowledge and then blend it with local knowledge in order to create new forms of local content (IKWW 2002). From this, the author can infer that literacy, in terms of both information and computer literacy, is a prerequisite for this interaction and exchange process to take place, and can be identified as the first indicator of this criterion. Although literacy is already identified under the good quality education opportunities indicator of the social criterion, information and computer literacy are important indicators of the knowledge criteria.

In addition to the skills that are needed for this interaction and exchange process to take place, there also needs to be information that can be exchanged. Hence, the creation of local content and local e-content can be identified as the second indicator of the knowledge criterion. The importance of local content was also addressed as one of the key principles of the WSIS Declaration of Principles (WSIS 2003). This principle states unequivocally: “The creation, dissemination and preservation of content in diverse languages and formats must be accorded high priority in building an inclusive information society, paying particular attention to the diversity of supply of creative work and due recognition of the rights of authors and artists.” Hence, communities and countries must be encouraged to create local content and e-content in diverse languages if they want to become information and knowledge societies. Thus the indicators of the knowledge criterion include (but are not limited to): a high level of computer and information literacy skills and the creation of local content/e-content.

As can be seen from the above discussion, the indicators and sub-indicators of the criteria of the information and knowledge society are very comprehensive and can be used as a benchmark for governments to ascertain information and knowledge society status. These criteria can also be used by policy makers and funding organisations to ensure that more attention and finances are directed at specific problem areas as identified through the application of the indicators and sub-indicators. In the following section the author will discuss the MDGs and investigate whether correlations can be drawn between the above discussed indicators and sub-indicators and the eight MDGs.

## **4 THE MILLENNIUM DEVELOPMENT GOALS**

In 2000, under the auspices of the UN, the leaders of the world came together and identified eight key areas of human strife to be alleviated by the year 2015. These eight areas are known as the Millennium Development Goals (MDGs). It is the author’s intent to show that correlations can be drawn between these eight MDGs and the criteria of an information and knowledge society. This correlation could prove to be very important as it would place the information and knowledge society status of countries in a global arena. As the United Nations Secretary General, Ban Ki-moon aptly states: “Meeting the goals is everyone’s business. Falling short would multiply the dangers of our world.” Billions of people are looking to the international community to realise the great vision embodied in the Millennium Declaration” (United Nations 2010b). Therefore, if correlations can be made between the criteria of an information and knowledge society and the MDGs, it would become ‘everyone’s business’ to ensure information and knowledge society status. More aid and assistance from the international community will especially support developing countries that are faced with numerous barriers that prevent them from becoming information and knowledge societies.

The first MDG is the eradication of extreme poverty and hunger. This goal has three achievable targets that relate to both poverty rate and unemployment rate. The first target is to reduce the proportion of people who live on less than \$1.25 a day by half (United Nations 2010a). This target can be directly correlated to the second indicator of the economic criteria of the information and knowledge society, namely standard of living. As previously discussed, a high standard of living is comprised of low income inequality, low poverty rate and high real income per person. The second target of the first MDG is to achieve complete and productive employment and respectable job opportunities for all (United Nations 2010a). This target can be linked to the third indicator of the economic criteria, namely employment opportunities. The last target for this MDG is the halving of the proportion of people who suffer from hunger (United Nations 2010a). This target can be linked to all the indicators of the economic criteria of an information and knowledge society. If people in this society have a high standard of living resulting in low poverty rate, low unemployment rate and high real income per person, these people will be able to fulfil their basic needs such as food and shelter and hunger will be reduced.

The second and third MDGs focus on universal education, in particular, providing a full primary school education to all boys and girls alike as well as eliminating gender disparity in primary as well as secondary education (United Nations 2010a). As education falls within the social sphere of society, these goals can be correlated to the social criteria of the information and knowledge society. As mentioned earlier, the second indicator of the social criteria addresses education opportunities and focuses on literacy rates of a country, as well as on the number of compulsory years of education within the country. These targets can also be supported by the third indicator of the social criteria which deal with modern online public services specifically initiatives aimed at e-learning within the information and knowledge society. Such initiatives can help provide a full primary and secondary education to boys and girls and thus help achieve the second and third MDGs.

Child mortality is the focus of the fourth Millennium Development Goal and, together with the fifth and sixth MDGs, addresses the health and wellbeing of people. These goals all relate to the social criteria of the information and knowledge society. As previously mentioned, the first indicator of the social criteria relates to good health prospects that can be measured by looking at: the mortality rates and life expectancy of citizens; the number of practicing physicians in the country; and the total expenditure on health as a share of GDP. Within an information and knowledge society there is a high spending on health as a share of GDP which enables the country to invest in more and better health facilities as well as pay for more practicing physicians. In increasing the number of health facilities and qualified physicians in the country, the citizens of these countries would have access to more facilities and qualified medical personnel that could treat their ailments better and faster, thus resulting in lower mortality rates and higher life expectancy (Holmner 2008). In doing so, child mortality can be reduced by two-thirds (fourth MDG), maternal mortality rates can be lowered (fifth MDG) and diseases such as HIV/Aids, Malaria and TB can be combated (United Nations 2010a). As with the second and third MDGs, the fourth, fifth and sixth MDGs would also be supported by the third indicator of the social

criteria, namely modern public services. With regard to the health of citizens, modern public initiatives such as e-health initiatives aimed at improving the health of people will be of special interest. It is thus of the utmost importance that governments pay special attention to meeting these criteria of the information and knowledge society, and in doing so support the achievement of the fourth, fifth and sixth MDG.

Unlike the first six MDGs the seventh and eighth MDGs cannot be directly related to the criteria of an information and knowledge society. However, the author is of the opinion that, indirectly, there are numerous correlations that can be drawn between environmental sustainability (seventh MDG), global partnerships (eighth MDG), and becoming an information and knowledge society. The seventh MDG focuses on reducing environmental as well as biodiversity loss (United Nations 2010a). According to the European Information Society Thematic Portal (2007), an information and knowledge society embodies a shift away from an energy intensive, polluting economy to a dematerialised, knowledge base economy. Through the utilisation of a sophisticated ICT infrastructure, the second criteria of an information and knowledge society, the human environmental footprint can be reduced, from manufacturing and transport systems to our personal residences (European Information Society Thematic Portal 2007). However, much more still needs to be accomplished. Damage to the environment is a cross-border problem necessitating national as well as global partnerships relating to the eighth MDG. This MDG is also aided by the second criteria of the information and knowledge society, namely the spatial and technological criteria. Through the utilisation of modern ICTs, time and spatial limitations of communication are abolished, resulting in more efficient and effective global communication and the forming of global partnerships.

It is evident from the above discussion that correlations can be made between the criteria of an information and knowledge society and the eight MDGs. Consequently, becoming an information and knowledge society and adhering to the seven criteria of such a society will aid countries in achieving these goals and realising the great vision embodied in the Millennium Declaration (United Nations 2010b). However, as this is a typical chicken and egg scenario, correlations can be drawn both ways. Achieving the eight MDGs will therefore also assist countries in achieving information and knowledge society status more rapidly. In the following section the author will discuss how the indigenous knowledge of countries can be harnessed to help achieve the MDG and, in doing so, assist countries in attaining information and knowledge society status.

## **5 INDIGENOUS KNOWLEDGE AND THE MILLENNIUM DEVELOPMENT GOALS**

“Traditional knowledge is very powerful. This knowledge is our birthright. It was given to our people when we were placed here on Mother Earth with sacred instructions on how to live as caretakers of Mother Earth. But if it is not used and shared, then it becomes useless.” These were the words of Alvin Manipayes (2010) at the opening of the first International

Roundtable Supporting Ancient Indigenous Knowledge, which was held at the Turtle Lodge on the Sagkeeng First Nation in Manitoba in 2010. They echo the sentiment of the World Bank (1998), namely that indigenous knowledge is a powerful, underutilised resource in the development process. This section of the article will focus on case studies and examples of successful applications of indigenous knowledge to help support development and assist in the achievement of the MDGs. In literature, numerous examples and case-studies have been documented illustrating how indigenous knowledge can be successfully harnessed to solve local problems as these techniques are cost effective and usually based on locally available resources (Garg nd). Following are a few selected examples.

In the northern Indian state of Uttar Pradesh, indigenous knowledge has been successfully harnessed to help eradicate poverty and hunger (MDG 1) through the implementation of the Sodic Project, a joint venture of the Uttar Pradesh government and the World Bank. This project aided in the harnessing of various indigenous knowledge farming techniques to assist in the reduction of poverty and hunger. One of these techniques is the utilisation of the disinfectant quality of Margossa (neem) leaves. The qualities of these leaves have been known to the Indian population for centuries. To prevent losses in stored food grains, farmers from various villages in the Uttar Pradesh district decided to make use of these leaves to keep weevils and other insects from infesting stored grain supplies. Farmers used shade-dried Margossa leaves laid in alternate layers with grains in storage bins. These bins were closed airtight with the help of a paste prepared with mud and cow dung. This indigenous technique will ensure that stored grain supplies will stay free of infestations for more than a year if the bin is not opened (Garg nd). This indigenous storing technique will thus keep stored grains edible for a much longer period of time without an additional financial outlay from farmers, thus assisting in eradicating poverty and hunger.

With regard to the second MDG, indigenous knowledge can act as an influential tool in an education environment to teach children (IK Notes 2005). For many centuries, the people of north eastern Uganda, the Karimojong, resisted any form of formal western education. This resistance was symbolised through the burial of a pen by Karimojong elders in the 1930's, who declared any Karamoja who tried to provide a formal education to their children an enemy of society. Later attempts by both colonial and postcolonial governments to re-introduce formal education in Karamoja were directly defeated, as well as the attempt to introduce free universal primary education by the Ugandan government in 1997. However, in 1998, indigenous knowledge proved to be the solution to this education dilemma. The Ugandan Ministry of Education, together with Save the Children, developed a new curriculum, ABEK – Alternative Basic Education for Karamoja – using locally available indigenous knowledge. ABEK was designed with two principal goals, namely to change the Karimojong attitude towards education and to facilitate a pathway to formal school for these scholars. Indigenous knowledge was particularly constructive in putting together an appropriate curriculum that would be blessed by elders. Furthermore their indigenous language is also used as medium for instruction by the teachers instead of English which was used in all the failed attempts in the past (Munaabi & Mutabaazi 2006).

Utilising an indigenous language as medium for providing women with an education will furthermore help achieve the third MDG, namely the empowerment of women. According to the programme of action of the United Nations International Conference on Population and Development in Egypt: “Education is one of the most important means of empowering women with the knowledge, skills and self-confidence necessary to participate fully in the development process” (UNFPA nd). Various programs have empowered women through this process, for example, in a United Nations Population Fund-supported project in **Bolivia**, women are being taught to read in their indigenous language while learning about reproductive health, safe motherhood and health insurance (UNFPA nd). In Senegal, the lack of literacy among girls and women was being addressed through the TOSTAN woman education initiative which provided literacy training in their own indigenous language. After the completion of this course, the empowered women wished to address the problem of female circumcision, a longstanding tradition in their community. By informing themselves on similar practices in neighboring villages and of the health effects of circumcision on women, they eventually convinced the village council to abolish the practice officially (IK Notes 1998).

As mentioned earlier, MDGs four, five and six all relate to health, with special focus on the mortality rate of children and mothers, as well as combating diseases such as HIV/Aids, Malaria, Tuberculosis (TB) etc. In some Asian and African countries, 80 per cent of the population rely on indigenous medicines for primary health care (WHO 2008), and numerous case studies have been documented where indigenous medicine has been used to improve the health of people. One example is the use of twenty-three plant species to treat diarrhoea in northern Maputaland, KwaZulu-Natal Province, South Africa (De Wet, Nkwanyana & Van Vuuren 2010). In Tanzania, the Tanga AIDS Working Group (TAWG) uses indigenous knowledge to work towards alleviating the suffering caused by HIV/AIDS using. Over 5 000 AIDS sufferers have already been treated with herbs prescribed by local healers. The impact has been very significant in reducing the opportunistic diseases brought on by the AIDS virus. These patients have responded very positively and have lived up to five years longer (IK notes 2002). Maternal health has also been improved through the use of Traditional Birth Attendants (TBA) in countries such as Sierra Leone, Uganda, Kenya and Rwanda to mention a few. Many of these countries are investing in training these TBAs and are thus combining global health practices with indigenous health practices. One such country is Rwanda which has spent two years training traditional birth attendants in remote rural areas. The combination of global knowledge with indigenous knowledge has been so successful that the health department of Rwanda believes that the overall maternal mortality rate will be reduced (Twahirwa 2010).

Preventing the extinction of indigenous herbal medicinal plants and other traditional healing modalities can help maintain local biodiversity and support the seventh MDG by ensuring environmental sustainability (Smith 2010). Various projects are under way to preserve indigenous plants, for example: Colombia created a rainforest reserve dedicated to the protection of medicinal plants (Butler 2008), and Hawaii has made great progress in protecting its rare native plants (Eaton & Sullivan 2010). Indigenous knowledge can also

be utilised for sustaining and maintaining forest biodiversity. According to Burger (1990) the Karen, Thailand's indigenous population, has been sustaining the forests in Thailand through a shifting cultivation technique called swidden. This slash and burn technique prepares the land for cultivation. The system is most frequently used by the indigenous people of Asia and lowland Latin America. The Karen's economy is almost exclusively based on the continuation of their dry rice production. This system entails an area of forest being cleared of trees. The undergrowth is burned and rice is planted for harvesting in the future. Every year a fresh site is chosen and the cycle takes seven years to return to the patch of forest originally cleared. Through the utilisation of this system, the forest is regenerated (Burger 1990).

Developing a global partnership for development (MDG 8) is particularly important from an indigenous knowledge perspective as indigenous knowledge is a much underutilised resource in the development process (IK Notes 2003). An indigenous practice cannot be shared effectively if it is not captured, documented, and validated and, unfortunately, most community-based organisations lack this capacity. Developing global partnerships with agencies such as the World Bank will provide the needed financial and technical assistance to developing countries around the world. Such a partnership was developed between the World Bank, the East Africa Region and South Asia. The goal of this partnership was to integrate indigenous knowledge and practices into Bank-supported operations. Numerous global partnerships have been established over the years to assist the development process through the utilisation of indigenous knowledge. A very significant example of such partnerships is the Indigenous Knowledge for Development programme that was launched by the African Department of the World Bank in partnership with over a dozen organisations in 1998 (Gorjestani 2001), as well as the launching of "Local and Indigenous Knowledge Systems in a Global Society" (LINKS) by UNESCO in 2002 (UNESCO 2003).

As can be seen from the above discussion, indigenous knowledge can be of great assistance in supporting the MDGs. It has been argued that Africa's indigenous knowledge is an untapped resource (UNECA 2010). However, many developing countries do not have the capacity to harvest their own indigenous knowledge. Through the development of global partnerships, financial and technical assistance can be provided to these countries and would enable them to harness this knowledge and, in doing so, achieve the MDGs.

## **6 CONCLUSION**

Becoming an information and knowledge society, and benefiting from the resulting global flow of information that countries can access via the sophisticated ICT infrastructure, holds great promise for humankind (Chisenga 2000). This promise, combined with other advantages associated with becoming an information and knowledge society, has been the driving force behind numerous development initiatives around the globe. Unfortunately, as there have never been any measureable criteria to determine information and knowledge society status, many of these development initiatives have been aimed at incorrect contexts of society. In this article, the author has shown that numerous correlations can



be made between the construed criteria of the information and knowledge society and the MDGs. It has further been shown that countries need to start harnessing their indigenous knowledge so that it can be successfully utilised to help achieve the MDGs. As there are direct correlations between the criteria of an information and knowledge society and the MDGs, harnessing this powerful underutilised resource can assist countries in adhering to the stipulated criteria of the information and knowledge society and, in doing so, also progress toward achieving the eight MDGs. In this way, countries can help keep “the most important promise ever made to the world’s most vulnerable people” as set out in the Millennium Declaration (United Nations 2010b).

## REFERENCES

- Britz, JJ, Lor, PJ, Coetzee, EMI & Bester, BC. 2006. Africa as a knowledge society: a reality check. *International Information and Library Review* 38:25–40.
- Burger, J. 1990. *The Gaia atlas of first peoples: a future for the indigenous world*. < >: Penguin Books, Ringwood.
- Butler, RA. 2008. Colombia creates rainforest reserve to protect medicinal plants. <http://news.Mon.gabay.com/2008/0612-colombia.html> (Accessed 20 November 2010).
- Calanag, M. L. 2003. *Public libraries in the information society: what do information policies say?* World Library and Information Congress: 69th IFLA General Conference and Council, Berlin, 1–9 August 2003. Meeting 154, Asia and Oceania & Public Libraries.
- Chisenga, J. 2000. Global information and libraries in Sub Saharan Africa. *Library Management* 21(4):178–187.
- Creswell, JW. 2009. *Research design: qualitative, quantitative, and mixed methods approaches*. London: Sage Publications.
- De Wet, H, Nkwanyana, MN & Van Vuuren, SF. 2010. Medicinal plants used for the treatment of diarrhoea in northern Maputaland, KwaZulu-Natal Province, South Africa. *Journal of Ethnopharmacology* 130 (2):284–289.
- Eaton, J & Sullivan, R. 2010. Preserving Hawaii’s rare native plants. [http://articles.sfgate.com/2010-05-09/home-and-garden/20889669\\_1\\_limahuli-garden-native-plants-kauai-s-north-shore](http://articles.sfgate.com/2010-05-09/home-and-garden/20889669_1_limahuli-garden-native-plants-kauai-s-north-shore) (Accessed 10 November 2010).
- Europe’s Information Society Thematic Portal. 2007. ICTs for sustainability: understanding and protecting Europe’s environment. [http://ec.europa.eu/information\\_society/tl/qualif/env/index\\_en.htm](http://ec.europa.eu/information_society/tl/qualif/env/index_en.htm) (Accessed 15 November 2010).
- Flick, U. 2009. *An introduction to qualitative research*. London: Sage Publications.
- Foley, AH. 2005. Corporate council on Africa: U.S. Africa Business Summit. <http://www.exim.gov/news/speeches/jun2405.cfm> (Accessed 4 September 2007).
- Garg, MS. [nd]. Indigenous knowledge: experience of Sodic Project, U.P., India. [http://siteresources.worldbank.org/EXTINDKNOWLEDGE/Resources/Sodic\\_lands2.pdf](http://siteresources.worldbank.org/EXTINDKNOWLEDGE/Resources/Sodic_lands2.pdf) (Accessed 22 November 2010).
- GESCI. 2008. Building a knowledge society for all. <http://www.gesci.org/assets/files/GeSCI%20Literature.pdf> (Accessed 4 August 2010).
- Goddard, J. 1991. Networks of transactions. *Times Higher Education Supplement*, 22 February.

- Gorjestani, N. 2001. Indigenous knowledge for development: opportunities and challenges. [http://www.unctad.org/trade\\_env/docs/gorjestani.doc](http://www.unctad.org/trade_env/docs/gorjestani.doc) (Accessed 13 November 2010).
- Hamid, NA & Zaman, HB. 2008. *Preliminary study on knowledge society criteria and indicators: a cognitive informatics approach*. IEEE Conference Proceedings: International Symposium on Information Technology: 1–7.
- Holmner, MA. 2008. A critical analysis of information and knowledge societies with specific reference to the interaction between local and global knowledge systems. Doctoral thesis. Pretoria: University of Pretoria.
- IK notes. 1998. Senegalese women remake their culture. <http://siteresources.worldbank.org/EXTINDKNOWLEDGE/Resources/iknt3.pdf> (Accessed 18 November 2010).
- IK notes. 2002. Traditional medicine in Tanga today. <http://siteresources.worldbank.org/EXTINDKNOWLEDGE/Resources/iknt51.pdf> (Accessed 12 November 2010).
- IK notes. 2003. Indigenous knowledge: the East Africa-South Asia learning exchange. <http://www.worldbank.org/afr/ik/iknt55.pdf> (Accessed 22 November 2010).
- IK notes. 2005. Education: building on indigenous knowledge. <http://www.worldbank.org/afr/ik/iknt87.pdf> (Accessed 13 August 2010).
- IKWW. 2002. *Indigenous knowledge worldwide: linking global and indigenous knowledge*. Den Haag: Nuffic.
- Machlup, F. 1962. *The production and distribution of knowledge in the United States*. Princeton, NJ: Princeton University Press.
- Manitopyes, A. 2010. Manitopyes: our survival depends on indigenous knowledge. <http://www.indiancountrytoday.com/opinion/Our-survival-depends-on-indigenous-knowledge-101153609.html> (Accessed 20 November 2010).
- Martin, WJ. 1988. *The information society*. London: Aslib.
- Martin, WJ. 1995. *The information society*. London: Aslib.
- Munaabi, G & Mutabaazi, E. 2006. Karamoja: resurrecting the pen. <http://www.ugpulse.com/articles/daily/Heritage.asp?about=Karamoja%3A+Resurrecting+the+Pen&ID=430> (Accessed 19 November 2010).
- Nanzhao, Z. 2001. Information technologies in educational innovation for development: interfacing global and indigenous knowledge. A Report of the Sixth UNESCO-ACEID International Conference on Education, Bangkok, Thailand, 12–15 December 2000. <http://unesdoc.unesco.org/images/0012/001264/126427e.pdf> (Accessed 23 September 2007).
- Nassimbeni, M. 1998. The information society in South Africa: from global origin to local vision. *South African Journal of Library and Information Science* 66(4):154–161.
- Okinawa Charter on the Global Information Society. 2000. [http://www.g8.fr/evian/english/navigation/g8\\_documents/archivesfrom\\_previous\\_summits/okinawa\\_summit\\_2000/okinawa\\_charter\\_on\\_global\\_information\\_society.html](http://www.g8.fr/evian/english/navigation/g8_documents/archivesfrom_previous_summits/okinawa_summit_2000/okinawa_charter_on_global_information_society.html) (Accessed 23 September 2007).
- Rheingold, H. 1993. *The virtual community: homesteading on the electronic frontier*. Reading, Mass: Addison-Wesley.
- Rohrbach, D. 2007. The development of knowledge societies in 19 OECD countries between 1970 and 2002. *Social Science Information* 46(4):655–689.
- Smith, DM. 2010. Many Ayurvedic medicinal plants on the endangered species list. <http://www.suite101.com/content/many-ayurvedic-medicinal-plants-on-the-endangered-species-list-a296396> (Accessed 22 November 2010).

- Spangenberg, JH. 2005. Will the information society be sustainable? Towards criteria and indicators for a sustainable knowledge society. *International Journal of Innovation and Sustainable Development* 1(1/2):85.
- Twahirwa, A. 2010. Retraining Rwanda's traditional birth attendants. <http://ipsnews.net/news.asp?idnews=53018> (Accessed 21 November 2010).
- UNDP. [nd]. What are the Millennium Development Goals? <http://www.undp.org/mdg/basics.shtml> (Accessed 12 October 2010).
- UNDP. 2009. Human development report 2009: Overcoming barriers: human mobility and development. <http://hdr.undp.org/en/reports/global/hdr2009/> (Accessed 10 September 2010).
- UNDP. 2010. Fast facts. United Nations Development Programme: The Millennium Development Goals. <http://www.undp.org/publications/fast-facts/FF-mdg.pdf> (Accessed 12 October 2010).
- UNECA. 2010. Harnessing knowledge to achieve the Millennium Development Goals (MDGS). <http://www.uneca.org/ednd/events/Harnessing/docs/Aide%20Memoire.pdf> (Accessed 22 November 2010).
- UNESCO. 2001. Declaration on preserving cultural diversity. <http://unesdoc.unesco.org/images/0012/001271/127161e.pdf> (Accessed 19 March 2007).
- UNESCO. 2003. Local and indigenous knowledge systems. [http://portal.unesco.org/science/en/ev.php\\_URL\\_ID=1945&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/science/en/ev.php_URL_ID=1945&URL_DO=DO_TOPIC&URL_SECTION=201.html) (Accessed 21 November 2010).
- UNFPA. [nd]. Promoting gender equality. [http://www.unfpa.org/gender/icl\\_07.htm](http://www.unfpa.org/gender/icl_07.htm) (Accessed 18 November 2010).
- United Nations. 1948. Universal declaration of human rights. Adopted and proclaimed by General Assembly resolution 217 A (III) of 10 December 1948. <http://www.un.org/Overview/rights.html> (Accessed 13 August 2007).
- United Nations. 2007. Millennium Development Goals: 2007 Progress Chart. [http://millenniumindicators.un.org/unsd/mdg/Resources/Static/Products/Progress2007/MDG\\_Report\\_2007\\_Progress\\_Chart\\_en.pdf](http://millenniumindicators.un.org/unsd/mdg/Resources/Static/Products/Progress2007/MDG_Report_2007_Progress_Chart_en.pdf) (Accessed 13 October 2010).
- United Nations. 2010a. Millennium Development Goals. <http://www.un.org/millenniumgoals> (Accessed 15 November 2010).
- United Nations. 2010b. Millennium Development Goals Report: 2010. <http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf> (Accessed 13 October 2010).
- Van Audenhove, L et al. 1999. Information society policy in the developing world: a critical assessment. *Third World Quarterly* 20(20):387–396.
- Webster, F. 2002. *Theories of the information society*. 2nd edition. London: Routledge.
- WHO. 2008. *Traditional medicine*. <http://www.who.int/mediacentre/factsheets/fs134/en/> (Accessed 17 November 2010).
- World Bank. 1998. Indigenous knowledge for development. <http://www.worldbank.org/afr/ik/broch.pdf> (Accessed 22 November 2010).
- WSIS. 2003. Declaration of principles. <http://www.itu.int/wsis/docs/geneva/official/dop.html> (Accessed 5 May 2007).

# LIBRARY AND INFORMATION MANAGEMENT EDUCATION AND TRAINING IN SWAZILAND: A REVIEW OF OPPORTUNITIES AND CHALLENGES

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## **ABSTRACT**

This article has been extracted from a study that investigated the feasibility of providing library and information management higher education in Swaziland. It highlights the state of library and information management higher education and training in that country and, with the aim of providing a clearer background for further investigation, explores the opportunities, challenges and feasibility of providing it. The results of the investigation are reported elsewhere.

## **KEYWORDS**

Library and information management, library and information management education, library and information management in Swaziland, library and information management training

## **1 INTRODUCTION**

Swaziland is a landlocked country of 17 360km,<sup>2</sup> surrounded by South Africa and Mozambique. Swaziland's population is estimated to be around 1.3 million and the majority of the population is ethnic Swazi. Independence was obtained in 1968 from British colonial rule and the country is governed under a form of constitutional monarchy in which power is shared by the king and parliament. There are also executive and judicial arms of government. The country's currency is Lilangeni, which is at par with the South African rand.

Swaziland presently faces a number of socio-economic challenges, most notably literacy levels,<sup>1</sup> poverty,<sup>2</sup> unemployment,<sup>3</sup> and the prevention, control and treatment of diseases.<sup>4</sup>

Libraries and information centres are essential in the fight to meet these challenges because they provide access to various sources of knowledge. Access to, and the full use of, libraries and information centres is fully dependent on the educational levels and training skills of the personnel who manage them. Educated and trained professionals are better equipped to procure, organise, repackage and disseminate relevant information to communities and thereby address the country's socio-economic ills.

Swaziland has a notable number of library and information management professionals trained at various levels in librarianship, library and information studies and/or library and information science. Most such professionals are employed within the country by university libraries, national and public libraries, college libraries, training institutions libraries, special libraries and a few high schools. The main employers of library and information management workers are the University of Swaziland and Swaziland National Library Services. The University of Swaziland – the only university in Swaziland at the time of the review – has three academic libraries in its three campuses. Swaziland National Library Services has one national library and fifteen public libraries scattered throughout the country. Of the eight colleges having libraries in Swaziland, five rely on the national library services for library positions and their library and information management workers are usually on secondment. Most schools have no running libraries, and government (through its civil service) <has had no vacancies? <Not ever?> for school librarians. Fundza, a non-governmental organization, assists schools without libraries by providing information resources [mainly books] and providing relevant library development and management skills to teachers.

In post-independence Swaziland, local higher education in Library and Information Management has been non-existent. Students have been acquiring tertiary education from higher education schools outside the country. Scholarships for prospective students have been [mainly] available from tertiary education schools in Botswana, Namibia, South Africa, Australia, the United States of America, and the United Kingdom. Government, through the Ministry of Education and Training (MOET) and the Ministry of Public Service and Social Security (MOPSSS), has been the main sponsor. Incumbent professionals have been trained at certificate, diploma, undergraduate and postgraduate degree levels.

Out-of-country education and training of library and information management professionals presents some benefits to new incumbents. These include the experience and personal development gained from training in well-established and reputable schools while being exposed to different social and cultural environments and also establishing out-of-country contacts and networks for sustainable professional development. However it also presents a number of challenges. One such challenge, as observed by Johnson (2007), is the relevance of imported tertiary education. Foreign-acquired education is often based on foreign models and environments that may not necessarily be similar to the country of the person acquiring the education. Another challenge is a continuous dependency on external agencies and the promotion of the idea that valuable

education and training can only be obtained from outside. A further challenge is that of cost; imported education requires a considerable amount of money, which limits the number of professionals that can be trained at a time. In Swaziland's case:

- Swaziland appears to be ignoring its own local education and training programmes in library and information management. There is still a lot of dependence on out-of-country schools to supply the required professionals.
- Government announced <date> a decrease in its scholarship funding and introduced new criteria for awarding scholarships based on certain priority areas, acceptable institutions, and exceptional academic performance. None of these favour the library and information management profession. It is becoming more expensive for government to fund out-of-country education and training. Relocation of other partners that have been contributing to the funding of tertiary education in this profession, such as the German Embassy from Swaziland to Mozambique and the British Embassy to South Africa, has also added to this problem.

However, even with these challenges, the need for properly educated and trained workers in library and information management needs to be addressed if libraries and information centres are to make a relevant impact on national development.

## **2 THE STATE OF LIBRARY AND INFORMATION MANAGEMENT EDUCATION AND TRAINING IN SWAZILAND**

Formal education in the library and information profession can be traced back to the 1950s and 1960s in most developing countries. According to Johnson (2007), this formal education “was motivated by the need to raise the education level of the countries’ populations, particularly to eradicate poverty”. The era of the 1950s and 60s is when a number of developing countries gained their independence from colonial rule. Libraries under colonial rule, as observed by Ocholla (2000), were mainly used by the foreign settlers and dominated by literature influenced by their tastes, leisure and culture. They were not meant for the natural or local citizenry of developing countries but for the elite groups of the colonial era.

Concerns about developing libraries and improved education in the profession, as indicated by Johnson (2007), often went hand in hand with the attainment of independence. Independence meant countries had to rebuild their economies and be fully involved in national development issues. Therefore libraries and information centres began to receive recognition as role-players in national development initiatives. Ocholla (2000:35) observes that, in most developing countries, training schools in library education were “established with government support within universities, colleges, national library services and through professional associations on the continent”.

Countries like Ghana and Nigeria had formal library education courses up and running by 1960, while in other countries they were established later, some only in the 90s.

The availability of library education on the African continent reduced the dependence of African countries on foreign and off-continent schools. This was, however, not the case in all countries in Africa, as some countries still continued to depend on foreign training in library and information education. Swaziland is one such country: it has still not fully established local education in library and information management and continues to send personnel outside the country for tertiary qualifications. Even though the country gained its independence in 1964 and has an established local university, higher education colleges, and training centres, education in library and information management within the country has been non-existent.

Swaziland has assumed a number of regional and global responsibilities since independence and has been recognised in a number of forums since independence. Some of these responsibilities and forums deal with, or have dealt with, human development, capacity building and social security. For example, Swaziland occupied the chair of the SADC Regional Training Council (RTC) which controlled the affairs of the Human Resources Development Sector that the country occupied in the early 90s. One of the projects of this sector was to create a Regional Human Resource Information System (RHRIS). This project provided guiding principles to those in the region who were responsible for human resources planning and development (Thapisa 1994). Even with this other key responsibilities in global forums that related to capacity building, the country continued to depend on foreign countries for its human resource development in library and information management education.

Basic library management and information-seeking skills are, however, offered as modules within education courses at the University of Swaziland. These are meant to empower teachers and encourage them to take responsibility for starting and maintaining libraries in their respective schools. As mentioned earlier, since most schools have no running libraries or vacancies for library and information management workers, it has become the responsibility of school teachers and principals to take the initiative and start, maintain and/or run libraries. It is because of this that basic courses are integrated into the education curricula of teacher qualifying programs, e.g. Bachelor of Education (primary and secondary) and the Postgraduate Certificate in Education.

These courses, however, represent only a small initiative when the diversity and extent of library and information work is considered. For this reason, graduates holding these teaching qualifications are not, under normal circumstances, in a position to look for jobs requiring library and information management qualifications.

Local training in the profession in Swaziland has taken on various forms. Training seminars, workshops and conferences have in the past been organised by: the local library association – the Swaziland Library and Information Association (SWALA); the local consortium < The local library and information consortium?> – the Swaziland Library

and Information Consortium (SWALICO); the American Embassy; the National Library, the Documentation and Information Policy Board; and the Swaziland Chapter of the Association of Health Information and Libraries in Africa (SCAHILA). These training initiatives targeted certain areas of professional practice, such as library advocacy, information and communication technology, policy formulation, collective bargaining, and marketing health information resources in the era of HIV and AIDS. These training initiatives did not cost the participants anything and were sponsored by partners and library- and information-supporting organisations. Training needs were scanned by the responsible committees within these bodies prior to the training being provided.

Another form of training in Library and Information Management available in the country is short-term training courses offered by training and management centres. These are centres such as the Mananga Centre for Regional Integration and Management Development, the Birch Cooper Institute, the Swaziland Institute of Management and Public Administration (SIMPA), and the Institute of Development Management (IDM). These institutions train the workforce and offer tailor-made courses to address the specific needs in organisations in the country and region. Mananga offers a “Strategic Management of Libraries and Information Resource Centres (SMLIRC)” course, divided into four-modules, each presented over four weeks, and run twice annually. According to the centre’s training calendar, the courses are divided into two levels. The training targets senior library assistants, resource managers, and information managers who have formal tertiary education at diploma level, or who have no formal training in library and information management at all. Mananga also offers records management and electronic records management courses.

Birch Cooper offers one to four-week courses in library administration, automation, research skills and information technology. These courses are provided through Birch Cooper’s campuses both in Swaziland and in South Africa.

SIMPA is a government-owned training centre that offers standalone courses in cataloguing and classification, Microsoft Office Suite applications, and management principles to library and information management workers, especially those in the civil service. IDM also offers short-term courses in managing libraries, information and documentation centres, key records management practices, and information technology applications in library and information work. The short courses in these training centres target people already working in service-oriented organisations or those who have been recently recruited and still lack practical skills in service provision.

Though short-term training is available in the country through these centres, and though the government (at times) fully supports and funds this training, the knowledge gained by professionals through this training does not lead to a formally recognised and remunerated qualification. Certification may be awarded based on attendance and completion, but may not be used to attain higher positions in the job market that require certain qualifications.



### 3 THE NEED FOR LIBRARY AND INFORMATION MANAGEMENT EDUCATION AND TRAINING

To reiterate, Johnson (2007) and Ocholla (2000) observed that the recognition of libraries and the role of information in societal development in developing countries grew in the post-colonial period when libraries were no longer the prerogative of colonial dwellers but the inheritance of the countries concerned. The responsibility of developing libraries in the post-colonial era fell to the citizens and not the foreign settlers. The need to educate and train the personnel necessary to manage local libraries and centres was a significant challenge, and one that continues to be faced.

Well-educated and trained library and information management professionals are essential in any country, both in the developed and the developing world (Ocholla & Bothma 2007). Education and training lead to professionals who can demonstrate the desired approach, skills, attitude and relevance in service provision that lead to the full exploitation of information by the intended users. Such education and training, if acquired in a local or similar-to-local environment, translates to professionals who are “well versed with and grounded in African socio-economic, cultural and political challenges and are capable of designing suitable information services to meet those challenges” (Albright & Kawooya 2007:115). Albright and Kawooya further emphasise that education and training in Library and Information Management in a local environment “should lead to professionals skilled in and attuned to solving unique local problems rather than those with general skills in information services delivery”.

Library and information management work is a service-oriented industry whose ultimate aim, according to Diso and Njoku (2007:130), is to “bring about positive transformation in societal value systems, attitude, and world outlook. To achieve this aim, education must close the gaps between theory and practice, i.e. between the intelligentsia and the larger society, between scholarship, abstract philosophy and concrete human reality.” Shiholo and Ocholla (2003) likewise suggest that it is better to provide basic professional education at home, meaning in a local environment where the current needs of the society will be reflected in the curricula and the final product will serve the local populace.

Karisiddappa (2004) refers to the transitional shift from an agricultural economy to an industrial economy, which is characterised by manufacturing and production, entrepreneurship and distribution, and strong global interaction and communication. This has created a lot of awareness of information as a useful resource that can be used and manipulated in or by developing countries. According to Gosh (2001), the impact of information on all spheres of society, coupled with the use of information technology to access information, has dramatically changed the face of libraries and information institutions. These changes, Gosh explains, have led to the current knowledge-based society, where information and knowledge are crucial to the development of a nation. Thus, expertise in the management and distribution of information and knowledge

becomes extremely important. Local higher education and training in library and information management has therefore become necessary to address these shifts and challenges and ensure the stable growth of the information market. Education is both the primary and long-term solution for addressing poverty and ensuring sustainable development. Thus investment in research and development and in higher education is the key to knowledge generation, innovation, and wealth creation associated with the industrial society (Britz, Lor & Bothma 2007).

The need for local higher education and training in Library and Information Management can also be justified by cost, as education and training at home is more affordable than out-of-country; in addition to high fees, host countries are often influenced by the state of their economy, cost of living, inflation, etc. Local education and training, as anticipated by Britz, Lor and Bothma (2007), could combat the current brain drain of professional labour that is experienced by developing countries. There is a high possibility of being attracted to foreign country markets after being exposed to their education and training, their way of life, and also their practice environment.

Lastly, libraries and information centres continue to experience stiff competition from other emerging information services that offer better technology (Ocholla & Bothma 2007). This emphasises the need for Library and Information Management professionals to continually update their knowledge and skills to cope with the competition and stay afloat.

## **4 THE DEMAND FOR LIBRARY AND INFORMATION MANAGEMENT**

In Ocholla's (2005) analysis of the job market for library and information management professionals in South Africa, libraries certainly ranked higher than other information handling institutions as employers and potential employers of LIS graduates. Traditionally, the market for education and training products in the profession were mainly existing libraries. More focus was placed on library markets because libraries were also seen to be the sole custodians of information resources at the time. In fact, libraries sustained the market, but challenges began to surface as information took on various new formats and the information market was infiltrated by other service providers that provided stiffer competition to libraries in terms of presenting and packaging information products. While this presented threatening challenges to the library service environment, it also expanded the market for library and information workers to be exposed to other types of information work that may not have been conceived of in previous times.

In Swaziland, libraries are also the main employers and potential employers of library and information management professionals. However, in recent times, this once 'guaranteed' market for the absorption of professionals has seemingly become saturated and less guaranteed. Library and information management professionals in the library employment sector usually undertake tertiary education on a study-leave basis and with the full support of their employers. This means that, upon completion of their studies, they are guaranteed

a job with their employer. The past and current job market guarantee is largely influenced by the pre-training scenario of having worked for libraries and information centres prior to formal education. The market has also been influenced by the requirements of training schools that have made practical experience in library and information work a requirement for admission to tertiary education in the profession. In the light of the above, it is very difficult for the market to attract new candidates because it has to anticipate the return of its own candidates who have advanced their education in the field.

The employment market in Library and Information Management is now reflecting different types of information-related activities. This emerging market, as noted by Ocholla (2005), offers professionals career opportunities in a broader environment that extends far beyond library and information science. In this market, the new positions are not library positions; rather they require information management skills and professionals who have a combination of skills that meet the current expectations of new markets. Some of these new skills and experiences are summed up by Mohammed (2008:15):

Knowledge, skills and experience in information management, information resources management; information delivery for enhanced creativity and innovations; expertise in the exploration and exploitation of information communication technologies and multi-media applications; expertise in knowledge management; good knowledge of management theories and practices; and information brokerage; and advocacy.

This kind of employment market is slowly surfacing in Swaziland, where non-library markets are also beginning to require information managers to fill positions such as research officers, data and publications officers, corporate communication and information managers, information management consultants, resource managers, and records managers. In more technically-oriented (information technology-based) organisations, the professional must equally demonstrate more expertise in competitive information technology application and IT-based problem solving skills that reflect the digital age. The information technology skills required from the information manager can include hardware manipulation and programming or the development of systems to address certain functions within the organisation. This market is very competitive and difficult to grasp for library and information management professionals who lack the knowledge and skills summed up by Mohammed (2008:15). This is because other professions, although non-information management-based, have a high interest in the same market and work around the logistics to provide the set of requirements that the market is looking for. It is therefore possible to find positions in the market filled by members of other professions such as journalism, communication and mass media, public relations, teaching/education and computer science. The requirements are not only about skills and expertise, but also about values, attitudes and the right mind-set. As Mohammed (2008:15) remarks, employers would naturally hire individuals who would add value to their organisations. Belief in adding value to an organisation is reflected more in how professionals sell themselves to employers and how they see themselves as part of the organisation than it is about a single profession.

An employment market that few professionals in Swaziland have tapped into is that of records management. Even though there are a lot of records centres, registries and information deposit centres within government, the public sector, parastatals, and private organisations that translate to a potential market for this cadre, little is done by professionals and employers to explore these markets. Pure records management is an area that is very under-exploited, unsupported and unpublicised in Swaziland. Unfortunately, this important domain of records management is rendered valueless if it is not managed skilfully by professionals.

Education and training can be a useful tool in realising other seemingly dormant markets, reviving them, and addressing their needs. Here we agree with Ocholla and Bothma's (2007) assertion that: "Educating and training LIS graduates with more knowledge and skills in broader information disciplines is realistic, viable and rewarding. Graduates from broad LIS programmes can work in any information-related field." It is this broad-based education and training that will enable professionals to search for and realise other dormant, non-existent and emerging markets in the present society and also be vigilant for new markets evolving within the new century.

Clearly there is a potential demand for library and information management workers. This demand is created by markets that already exist, or that are potential, dormant or undiscovered. Library and information management education and training must be provided and re-oriented to supply – or create and develop – products for these markets.

## **5 BENEFITS AND CHALLENGES OF PROVIDING LIBRARY AND INFORMATION MANAGEMENT EDUCATION AND TRAINING**

Providing Library and Information Management education and training may lead to a number of opportunities, especially if the education and training is provided in a local environment. The opportunities may be compiled as follows:

- Easily accessible and locally affordable education and training programs.
- Cost-effectiveness, in that funding can be delegated to more candidates in local schools.
- Fully relevant and applicable programs that meet the needs of host and neighbouring environments.
- A boost in the internal development of the profession as a result of local educational activities, new explorations, collaboration of educators and practitioners, and on-going, accessible, in-country research and knowledge generation and utilisation.
- Greater impact and recognition of the profession in the host country.
- The profession may attract more willing, 'fresh-minded', capable and motivated incumbents who will bring different expertise and diversity on board.

- The profession will be easily sustained if education and training programs are available locally because a large number of entrants can be guaranteed.
- Opportunities for networking and partnering for sustainable development with other education and training schools, partners, experts, funders, stakeholders, etc, in the profession.
- Co-operation and co-ordination at national and regional levels.
- Continuous education/ professional growth/ exposure for faculty members or educators.
- Opportunities for (relevant) research also exist (Ocholla & Bothma 2007). Ocholla (2007:10) maintains that: “Research and development form the backbone of any profession and also of any teaching programme” and emphasises that “there are many opportunities for relevant research in information-related fields in Africa” that are unique to the African continent and to each local environment.
- Opportunities for students enrolling for diverse LIS programmes with either broader information orientation or specialised information qualification programmes in areas of records management, publishing, multimedia, knowledge management, information technology, etc (Ocholla 2007).
- Despite these sound and attractive opportunities, challenges still exist and have been noted by a number of scholars (Minishi-Majanja & Ocholla 2004; Ocholla 2007; Ocholla & Bothma 2007; Poon 2006; Singh 2009). The challenges can be summed up as follows:
- An ever-expanding curriculum as a result of changing market needs, which over-stretches human resources and the skills of library and information management schools.
- Ever-changing and increasing technology applications, presenting a continuous demand for newer and more relevant skills and infrastructure from providers and recipients of Library and Information Management education and training.
- Constant pressure to keep up with employers’ expectations and maintain quality standards of graduates in unpredictable environments.
- Meeting pre-set and agreed enrolment targets to justify existence.
- High enrolment interests can be a challenge if there are limited resources.
- Inactive professional association bodies that could positively influence education, content and quality expectations of graduate candidates.
- Limited government (financial) support due to other priority areas. Tertiary education is largely funded by government and most tertiary institutions depend on government for subventions. The funding received might not meet all the requirements of library and information management education institutions.
- Lack of cooperation and resource sharing among stakeholders.
- Extensive research and scholarship, which is a must for the provision of education and training. Not all educators may be keen or equipped for this task.
- Marketing of LIS programs in the midst of all the available and attractive programs, creating strong competition.

- Poor awareness and recognition by stakeholders of the importance of libraries and information organisations in the development of library and information management education and training.
- Rapid growth of the Internet, necessitating the constant upgrading of hardware and software, which is difficult as funding is not immediately available to support these developments.
- Inadequate access to computers, or unequal distribution in terms of student/computer ratios because of inadequate ICT resources.
- The financial and maintenance burden of infrastructure, equipment, facilities and resources.
- Swaziland is a small country and does not have many libraries. To make a library school viable academically and financially, a critical mass/pool of students needs to be available (Poon 2006). Ocholla (2007) observes that, without student numbers, LIS schools cannot exist and thrive.
- Limited job opportunities in libraries as the expansion of libraries in Africa is minimal or, in some cases, non-existent (Ocholla 2007). This negatively influences enrolment for LIS education programs by prospective entrants.
- Inadequate funding for libraries (especially national, public and community libraries) that are supposed to be the major market for library and information management workers

The challenges presented above are not exhaustive. However, even with the presence of so many challenges, it is evident (from the discussion on demand) that the provision of library and information management education and training is a necessary undertaking in addressing many of the country's socio-economic challenges. The opportunities suggest areas where more effort should be placed and where resources should be invested or directed.

## **6 THE ROLE OF MAJOR STAKEHOLDERS IN LIBRARY AND INFORMATION MANAGEMENT EDUCATION AND TRAINING**

Partners and stakeholders play an active role in any profession that aspires to grow and have a positive impact on society. Partners and stakeholders provide much-needed support, direction, a collective voice, a bargaining forum, and recognition of status. They can also provide a way forward for a profession in different times while facing different challenges. Sometimes these partners and stakeholders are merely supporters and 'shoulder-offering' bodies and organisations, offering support without being deeply involved and connected to the profession and its practices. In other cases they can be a driving force behind the activities, ethics and definition of a profession. They can be professional associations, bodies, councils, commissions or denominations that provide

disciplinary measures, award certification, and facilitate the withdrawal of qualifications and practice rights of their members. This is all usually done in the spirit of protecting the public and ensuring the responsibility and dispensation expected of professionals, as well as maintaining true professionalism and good conduct.

In library and information management education and training, the major partners and stakeholders are professional associations known as library and information associations. These associations provide a voice and a forum for the profession in their respective countries and have a mandate to keep their members up to date with international developments, trends and expectations in the profession. Library and information associations are the initial step of professional association and deliberation within countries, and therefore the most important stakeholder in issues of education, training and professional development. Thus, they sometimes offer educational courses in collaboration with other institutions, organise and provide short-term training through seminars and workshops, and also support professional development of any kind within the profession. They are the first contact with the major professional world for all practicing professionals. Library and information management associations are important in the development of LIS education since they have often been responsible for setting up short courses for people already working in libraries and who have had no formal library training (Johnson 2007). Harvard-Williams and Atan (1987) felt that a strong library association could positively influence government policy towards libraries and library education.

The Swaziland Library and Information Association (SWALA) is a local professional body involved in issues of the profession. These include interaction (formal and informal), short-term training (seminars, workshops, tours and professional visits), promoting libraries and information to society, and supporting the establishment of libraries, resource centres and reading initiatives. Some of its current objectives are:

- Promoting the establishment and development of library and information services.
- Uniting all persons engaged or interested in library and other information work.
- Safeguarding and promoting the professional interests of librarians and other information personnel.
- Monitoring any legislation affecting libraries and information centres, or whatever legislation is considered necessary for the regulation and management or extension of libraries and other information centres.
- Promoting and encouraging bibliographical studies, research and library co-operation through networking (<http://www.swala.sz>).

SWALA has five sub-committees, namely editorial, fundraising, legislation, member empowerment and information and communication technology (ICT). Even though SWALA's objectives include initiating, promoting and supporting the short-term training of professionals, it is not fully involved in the tertiary education of its members. It has no say in or influence on the education received, the curricula involved, or the certification obtained. These are the prerogative of the employer and the individual who

desires training. Informal deliberations at SWALA gatherings have led to an interest being communicated about the association offering some form of formal education to members, along the lines of a ‘Certificate in LIS’. To date, however, the idea has never been properly followed up or implemented and the association has yet to meet many challenges before it can fully address issues of professional development. Thapisa’s (1994) study on human resource planning in Swaziland challenges SWALA to develop a human resources database for the library profession through its sub-committee for human resources. The development of the human resources audit, according to Thapisa (1994), “[w]ill help to determine what skills, knowledge, and abilities are required for particular vacancies or jobs in Swaziland libraries”.

Apart from an active library and information association or professional body as a partner and stakeholder in the education and training of professionals, other partners and stakeholders tend to include government as a financer and employer, and also other employers. These partners and stakeholders, although not actively involved in professional issues, play an influential role in the education and training of professionals. For example, the government, as a major financer of tertiary education and training, determines the budget allocation, the key areas to be pursued, and also the institutions in which education and training can be acquired. The employment sector also influences the education and training of professionals because their needs must be reflected in the curricula and training so that professionals remain relevant in the field. These stakeholders have a say in what constitutes a true professional in the field of practice and can provide good feedback for training institutions. It is for this reason that tertiary and continuous education institutions often base their views on the current needs of the market and require stakeholders to render assistance in the practical placements of tertiary learners.

In developed countries, professional associations and bodies are not only influential partners and stakeholders, but also serve as accrediting authorities whose set standards must be met by any training institutions that either already exist, or are yet to be established (Diso & Njoku 2007). In the developing world, library and information management bodies are not fully active in this accreditation. Reasons put forward are the lack of manpower (Shiholo & Ocholla 2003), lack of expertise (Younis cited in Johnson 2007), and instability and internal wrangling (Ocholla 2000) in these local associations. The education and training offered at tertiary institutions therefore continues to be uninfluenced by these bodies which are supposed to be the main stakeholders.

## 7 CONCLUSION

The issue of relevance of imported education and training is widely covered in literature, although in the context of importation from developed to developing countries, and with seemingly collective agreement that education obtained from outside cannot be relevant to the needs of the African environment. There seems to be a general consensus on the financial implications of importing education and training from the western world and its negative impact on developing countries’ economies.



Another concern is the change in the formerly predictable employment market of library and information management professionals brought about by new and emerging information-related services that compete unfairly with libraries. The feeling is that library and information management professionals need to be relevantly equipped to tap into this new market and compete effectively, more so because traditional library markets are stagnant. Professional associations and bodies in developing societies are also not contributing effectively towards the profession through active involvement in tertiary education, standards setting and accreditation, particularly when compared to their counterparts in the developed world.

Throughout the literature, the concerns of the profession in the developing world remain consistently similar, although the degree or details may vary in certain applications. It is necessary to investigate the impact in other developing countries that are still do not host their own education and training in library and information management, or in those countries whose efforts are still very minimal and thus hardly noticeable.

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## REFERENCES

- Albright, K & Kawooya, D. 2007. Libraries in the time of AIDS: African perspectives and recommendation for a revised model of LIS education. *The International Information & Library Review* 39(2):109–120.
- Britz JJ, Lor PJ, & Bothma, TJ. 2007. Building library leadership in Africa: a proposed education initiative. *The International Information & Library Review* 39(2):103–108.
- Diso, LI & Njoku, IF. 2007. Library and Information Science education in Nigeria: curricula contents versus cultural realities. *The International Information & Library Review* 39(2):121–133.
- Gosh, SB. 2001. Reaching the unreached for library and information science education: a perspective for developing countries. *World Library and Information Congress: 67<sup>th</sup> IFLA Council and General Conference*, 16–25 August 2001, Boston.
- Harvard-Williams & Atan. 1987. Cited in Johnson, CA. 2007. Library and Information Science Education in developing countries. *The International Information & Library Review* 39(2):67–71.
- Johnson, CA. 2007. Library and Information Science education in developing countries. *The International Information & Library Review* 39(2):67–71.
- Karisiddappa, CR. 2004. Library and Information Science curriculum for the developing countries. *World Library and Information Congress: 70<sup>th</sup> IFLA General Conference and Council*, 23–27 August 2004, Buenos Aires, Argentina.

- Minishi-Majanja, MK & Ocholla, DN. 2004. Auditing of information and communication technologies in library and information science education in Africa. *Education for Information* 22(3):187–221.
- Mohammed, Z. 2008. Attracting students into library and information science programmes in developing countries: the Nigerian experience. *World Library and Information Congress: 74<sup>th</sup> IFLA General Conference and Council*, 10–14 August 2008, Quebec, Canada.
- Ocholla, DN. 2000. Training for Library and Information Studies: a comparative overview of LIS education in Africa. *Education for Information* 18(1):33–52.
- Ocholla, DN. 2005. An analysis for the job market in library and information services in South Africa: some thoughts and empirical evidence. Paper presented at the 9<sup>th</sup> LIASA (RETIG) Annual Conference, 25–30 September 2005, Nelspruit, Mpumalanga.
- Ocholla, DN. 2007. The current status and challenges of collaboration in Library and Information Science (LIS) education and training in Africa. *World Library and Information Congress: 73rd IFLA general conference and council* 19–23 August 2007, Durban, South Africa. <http://www.ifla.org/iv/ifla73/index.htm> (Accessed 21 August 2009).
- Ocholla, D & Bothma, T. 2007. Trends, challenges and opportunities for LIS education and training in Eastern and Southern Africa. *New Library World* 108(1):55–78.
- Poon, PWT. 2006. LIS education in Macau: big challenges for a small territory, in Khoo, C, Singh, D & Chaudhry, AS (eds), *Proceedings of the Asia-Pacific Conference on Library & Information Education & Practice 2006 (A-LIEP 2006)*, Singapore, 3–6 April 2006. Singapore: School of Communication & Information, Nanyang Technological University:279–283.
- Shiholo, BM & Ocholla, DN. 2003. Changing trends in training needs for information professionals in Kenya. *LIBRES* 13(1):<pages>.
- Singh, N. 2009. Bridging the digital divide in India: some challenges and opportunities. [http://www.worlib.org/vol17no1/singh\\_v17n1.shtml](http://www.worlib.org/vol17no1/singh_v17n1.shtml) (Accessed 21 August 2009).
- Swaziland Library and Information Association (SWALA). <http://www.swala.sz> (Accessed 23 March 2009).
- Thapisa, APN. 1994. Human resources planning in Swaziland: Rolls-Royce versus Volkswagen approaches. *Library Management* 15(4):22–29.

## NOTES

- 1 Even though literacy is above 75 per cent among the youth (15–24 years), it relates to basic reading and writing and has nothing to do with the education levels that are required for socio-economic development
- 2 Two thirds of the population live below the poverty line, i.e. below \$1.00 per day
- 3 Rate of unemployment is at 40 per cent.
- 4 The country has the highest rate of HIV in the world, currently at 26.1 per cent among pregnant women. There are also devastating diseases like tuberculosis, malaria and cancer.

# INFORMATION-SEEKING BEHAVIOUR OF IN-SERVICE SECONDARY LEVEL GEOGRAPHY TEACHERS IN LESOTHO

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## **ABSTRACT**

This article forms part of a doctoral study currently being undertaken in the Department of Information Science at the University of Pretoria. It describes a now-completed investigation of the information-seeking behaviour of secondary level in-service geography teachers in Lesotho using focus group discussions. There were 82 participants in this sub-study teaching in various schools that offer geography both at junior and senior secondary levels in Lesotho. The study used Leckie, Pettigrew and Sylvain's (1996) model of the information seeking of professionals as its framework. Although Leckie et al's (1996) model identifies five professionals' work roles that trigger information needs, this study identified three work roles: educator role, administrative role and non-academic role. In addition, the secondary geography teachers who were studied tend to use syllabus documents, learners' textbooks and colleagues as predominant information sources. They prefer information that will be easily understood by their learners and go to great lengths to seek information related to what they will deliver in class. This paper offers a descriptive report of some key results.

## **KEYWORDS**

Geography, information behavior, information needs, information-seeking, information sources, Lesotho, teachers.

# 1 INTRODUCTION

In Lesotho, secondary education is part of formal education following seven years of basic primary education. Learners start primary education at the age of six. The entry requirement into secondary education is the primary school leaving examination. Secondary education is divided into three years of junior secondary – which is often called junior certificate (JC) because the learners write JC examinations – and two years of senior secondary education that ends with Cambridge Overseas School Certificate (COSC) examinations. Secondary education subjects include Mathematics, English Language, English in Literature, Sesotho, Science and Geography. However, Geography is not offered in every school and some schools offer it only at junior secondary level. This paper reports some descriptive results of a study which involved in-service geography teachers in schools that offer geography both at junior and senior secondary levels. It was crucial to work with teachers in these schools because, while the JC geography syllabus is formulated in Lesotho, the COSC geography syllabus is formulated by the University of Cambridge. The differences between these two syllabi might trigger different information needs that have to be addressed through an information service.

Most secondary level teachers in Lesotho attain their teaching credentials after completing a three-year diploma at the Lesotho College of Education (LCE) or a four-year degree at the National University of Lesotho (NUL). The teacher training is meant to provide the fundamental knowledge and information for teaching.

Teachers are described as ‘the population group that is active, experienced and critical users of information’ (Taylor 1991:219). Therefore, it is important to study their information-seeking behaviour. While the field of education demonstrates a substantial amount of literature about teachers, the field of information science has yet to publish much with regards to teachers’ information behaviour (Mundt et al 2006:1). Literature on teachers’ information-seeking behavior emanates mostly from developed countries such as the United States of America (US), the United Kingdom (UK) and China. A few examples are Conroy et al (2000), Lan and Chang (2002), Pattuelli (2008), Perrault (2007) and Williams and Cole (2007). Often, it concerns only the teachers’ use of the Internet and other information and communication technologies such as computers and online resources in teaching (e.g. Barker 2009; Madden et al 2005; Noh et al 2004; Tahee et al 2004; Twidle et al 2006). The information-seeking behaviour studies on teachers in Africa are still limited, with exceptions including Nwokedi and Adah (2009) and Snyman and Heyns (2004). At the time of writing, there has not been any study reported on the information-seeking behaviour of teachers in Lesotho.

The importance of understanding the users’ information needs and information-seeking behaviour in order to point the way to innovations in information services (Hepworth 2007; Kerins et al 2004; Wilson 2006) led to an investigation of information needs and information-seeking behaviour of secondary level geography teachers in Lesotho. According to Bronstein (2010:61), understanding information-seeking behaviour can

result in the development and provision of information services that better serve the users' information needs.

## 1.1 Purpose of the study

This article is part of a study the purpose of which is to investigate the information-seeking behaviour of in-service secondary level geography teachers in Lesotho in order to improve information services for these teachers. It was instigated after an observation that the majority of secondary level geography teachers in Lesotho graduate from the NUL with a BSc Ed, BA Ed, or B Ed. At NUL, BSc Ed teachers study mostly physical geography, while the rest study mostly human geography. This creates a disparity in knowledge content regarding these two major geographical spheres, yet both groups are expected to teach both spheres in schools. It is envisaged that this disparity might be addressed through delivery of an appropriate information service. The study used the Leckie et al (1996) model (henceforth the Leckie model) of the information-seeking of professionals as its theoretical framework. The focus of this paper is only on the information needs and information-seeking of in-service secondary level geography teachers in Lesotho, based on the Leckie model. The objectives of the study addressed in this paper are:

- To ascertain the information needs of in-service secondary level geography teachers in Lesotho.
- To determine the information-seeking practices of in-service secondary level geography teachers in Lesotho.
- To identify the information sources preferred by these teachers.

## 2 CLARIFICATION OF KEY TERMS

It is important to clarify concepts such as information behavior, information need, information-seeking, information source and secondary geography teacher because of their relevance in this study.

### 2.1 INFORMATION BEHAVIOUR

In recognition of other definitions of information behaviour by Ingwersen and Järvelin (2005), Case (2007), Wilson (2000), and Fisher and Julien (2009), information-seeking behaviour is interpreted as human behavior dealing with the generation, communication, seeking and sharing of information pertinent to their information needs.

### 2.2 INFORMATION NEED

Information need may be understood, in the context of Belkin's "anomalous state of knowledge", as that knowledge gap or uncertainty existing within the individual that triggers information-seeking, either immediately or at a later stage in an attempt to address uncertainty (Belkin et al 1982:62). An information need may also be the

recognition of the existence of uncertainty in the personal or work-related life of the individual (Ingwersen & Järvelin 2005; Kuhlthau 2004). The information need may be expressed, unexpressed, dormant (Krikelas 1983) or passive, not necessarily leading to information-seeking (Wilson 1996).

## **2.3 INFORMATION-SEEKING**

Information-seeking is considered as the purposive acquisition of information from selected information carriers; these include information sources and channels for communicating information (Johnson 2003:737). Information-seeking includes examining the ways in which people find information they require, such as how and where people look for solutions to information problems (Burke 2007:679). Although everyday-life information-seeking (Savolainen 2005, 1995) and non-work related information-seeking also feature strongly in the literature (Case 2006; Courtright 2007), the study does not focus on it.

## **2.4 INFORMATION SOURCE**

The information source is a medium in which knowledge and/or information is stored (Nikalanta & Scamell 1990:25). In the workplace, Byström and Järvelin (1995:193) mention that from the workers' point of view an information source contains (or is expected to contain) relevant information. In this study, information source is an item that has information relevant to the in-service secondary level geography teachers.

## **2.5 IN-SERVICE SECONDARY LEVEL GEOGRAPHY TEACHER**

In-service secondary level geography teacher is a person who is teaching geography at the secondary education level in Lesotho and who is typically associated with high schools.

# **3 TEACHERS' INFORMATION-SEEKING BEHAVIOUR LITERATURE**

To gain insights on the information-seeking behaviour of teachers, relevant literature on the teachers' information needs and information-seeking, including their preferred information sources, was reviewed.

## **3.1 TEACHERS' INFORMATION NEEDS**

Pattuelli (2008) indicates that pedagogical, institutional and personal aspects of contexts may trigger the information needs of teachers. According to Pattuelli (2008), the pedagogical aspects relate to the way teaching and learning is done; institutional aspects are associated with national curriculum standards, including national examinations for testing whether standards have been met; and personal aspects pertain to individuals' characteristics such as attitude toward technology, ability to manage time, knowledge

of and experience with the subject matter to be taught. Mardis (2009:1) maintains that teachers have very specific information needs relating to mastering the curriculum content and the behavioural structure of their classrooms for a diverse range of learners. Perrault (2007) adds that teachers need information for curriculum content, presentation materials, personal knowledge and learning materials (for the learners). Mundt et al (2006:9) point out that teachers have three major roles that they often need information for. These are lesson planning and content, teaching methods and student evaluation. Likewise, Snyman and Heyns (2004:212) identified that the teachers' information needs in their study pertained to classroom activities, curricula and supportive study material. Similarly, Lan and Chang (2002) found that biology teachers' information needs included information pertaining to students, subject matter and pedagogical content. These scholars reveal an important issue about knowing more about the students one teaches. In addition, Conroy et al (2000) indicate that secondary school teachers' information needs include social and cultural information, information resources that are tailored for teachers and learners, as well as current information because things change a lot in modern times.

### **3.2 TEACHERS' INFORMATION-SEEKING**

Tanni et al (2008) found that teachers' information-seeking processes were influenced by their subject knowledge because this determines what to search for, what to deliver during the lesson, and where to search for more information. Their study revealed that teachers often start by reading the textbooks to familiarise themselves with the topic and, mainly, to compare different views. Depending on the outcome, they search for more information on the web using Google. In their study, the Internet was mainly used if the information from the textbooks was inadequate or conflicting. The information found was used in the lesson plans to complement textbooks, exemplify, illustrate, maintain interest or raise discussions in class. Moreover, Tanni et al (2008) found that when processing information, teachers choose only those parts of a document that will be understood by their learners. As such, they simplified the vocabulary and reduced and synthesised information. This is affirmed by Sánchez and Valcàrcel (1999:509) when they state that teachers take the students into account when preparing for lessons. They consider the level of the learners, their age and their general knowledge of the subject in question. When seeking information, teachers often consider materials that will be understood by their learners (Lundh 2005).

According to Tanni et al (2008), it is important to find appropriate ways of presenting information to the learners in a limited time, while still maintaining their interest in the topic. It is evident that the teachers bear the learners in mind when they are seeking information for teaching purposes. Lundh's (2005) study indicates that teachers consider it more important to find material that is useful in classroom situations than information that is scientific. The most important criterion for the selection of materials is its applicability in the classroom. Wu et al (2005) found that teachers' choice of resources on the internet was attributed to accuracy and currency of information as well as to the attractiveness of a website. Here, one gathers that teachers opt for information

that is not only accurate, but also current and attractive. Attractive information is bound to catch the eye of the learners, thereby drawing their attention.

### **3.3 TEACHERS' PREFERENCE FOR INFORMATION SOURCES**

Lundh (2005) found that, during training, teachers mostly used scientific material available through their academic libraries, but that as they started practice, their information-seeking became more related to their pupils; colleagues are mostly used as information sources. Shanmugam (1999) reveals that teachers prefer informal and interpersonal sources of information. Williams and Cole (2007:816) found that teachers tend to rely on readily available resources, particularly those available in their schools. Their frequently used information sources were mostly colleagues, in-service events, newspapers and reports available in the schools. Tanni et al (2008) reveal that information sources used by trainee teachers comprised both print and electronic documents such as textbooks, books, magazines, newspapers, compact discs, websites and videos. Moreover, teachers often used Google to search the Internet. Wikipedia was another source that was often used by these teachers instead of printed encyclopedias. Landrum et al (2002) studied teachers' perceptions of the trustworthiness, usability and accessibility of information from different sources. They found that teachers generally rated colleagues, workshops and in-service presentations as accessible, trustworthy and usable sources of information. In essence, professional journals were found to be less trustworthy, less usable, and less accessible when compared with the information from colleagues. Perrault (2007) stipulates that sources that teachers consult for planning purposes include personal notes and handouts, audio-visual materials and tests from previous years. Nwokedi and Adah (2009) found that teachers prefer textbook information above any other source of information.

## **4 THEORETICAL FRAMEWORK**

### **4.1 SYNOPSIS OF RELATED INFORMATION-SEEKING BEHAVIOUR MODELS**

Although there are various information behaviour-related models – and their critical analysis and contribution to studies of information-seeking behaviour is crucial – owing to the specific limited focus of this article, such analysis is not provided. However, one may point out that general information behaviour models include Dervin (1998, 1983), Wilson and Walsh (1996) and Wilson (1981). Information search and retrieval models include Ellis (1993, 1989), Ingwersen (1996) and Kuhlthau (1993, 1991). Information-seeking models include Byström and Järvelin (1995), Krikelas (1983), Leckie et al (1996) as well as Savolainen (1995) for everyday life and Choo et al (2000, 1999) and Marchionini (1995) for electronic environments. There is also Taylor (1991)'s model on information use. Leckie et al (1996:161) maintain that their model is applicable to all professionals and, therefore, it was used in this study of teachers even though Case (2007) criticises it



for restricting itself to the workplace. In the Southern African context, the suitability of the Leckie model for professionals has been reported by Du Preez and Fourie (2009) and Du Preez and Fourie (2010) in respect of consulting engineers in South Africa.

## **4.2 THE LECKIE MODEL OF INFORMATION-SEEKING OF PROFESSIONALS**

The Leckie model has six components: work roles, tasks, characteristics of information needs, awareness of information, sources of information and outcomes. Some of these components, such as information sources and information needs, are also eminent in other models, e.g. Kriekelas (1983) and Wilson (1996). From the Leckie model, one depicts that work roles lead to certain tasks that trigger information needs and, depending on the nature of the information need, information-seeking then occurs. The information needs determine the information sources to be used and also influence awareness of information. The information-seeking process results in outcomes. These outcomes provide feedback about the information-seeking process, including the information need, the sources of information as well as awareness of information. 'The basic assumption of the model is that the roles assumed by professionals in their work and associated tasks give rise to certain information needs, which in turn initiate information-seeking' (Kostiainen et al 2003:162). Niedźwiedzka (2003:9) indicates that certain roles such as a mother, leader, manager, doctor, teacher or member of a particular group, indicate specific information needs. For instance, the information needs of a medical doctor are different from those of a nurse because their roles differ. While a teacher requires information for lesson planning (Mundt et al 2006), a doctor needs information related to new techniques for patient care (Landry 2006).

Du Preez and Fourie (2009) used the Leckie model to study information-seeking of consulting engineers in South Africa. Landry (2006) used it to study information-seeking behaviour of dentists and Mundt et al (2006) used the model to frame questions around characteristics of the teachers' information needs and incorporated the 'work roles' component from the Leckie model into their new model. Drawing on the Leckie model, Mundt et al (2006) identified that teachers' information needs were related to planning lessons; evaluating pedagogy and understanding new resources for teaching; and assessing students. In addition, Mundt et al (2006) found that teachers use various resources to address their information needs. However, these resources have not been designed with a study of teachers in mind and therefore do not have the potential to serve the teachers' information needs. Baker (2004) used it on female police officers involved in undercover prostitution, while Kerins et al (2004) used it for engineering and law students. Kostiainen et al (2003) applied it in pre-trial police investigation. Wilkinson (2001) developed an information-seeking behaviour model of practicing lawyers and tested it against the Leckie model.

## 5 METHODOLOGY

The participants of the doctoral study relevant to the focus of this article were the in-service geography teachers who participated through focus group discussions because it was easier to assemble them into groups in their respective schools. The findings presented in this article emanate from their data. Owing to many schools in disparate locations in the districts of Lesotho, purposive sampling was used. Sampling considered the schools' location and proprietorship such that each district would be fairly represented and schools with different proprietors within one district would be included. In addition, the selection of schools had to be done with care to include schools in rural and urban settings, as well as lowlands and highlands regions within one district.

Fifty-one schools formed the population of this study given that only schools offering geography at both junior and senior secondary level and already participating in national examinations in 2008 were considered. A total of 28 schools participated in the study in seven out of ten districts of Lesotho. The other three districts did not participate because they did not have schools offering geography at both junior and senior secondary during data collection. The number of geography teachers in all the schools that were visited was 122 and, of this total, only 82 teachers participated in the study.

### 5.1 DATA COLLECTION

Data were collected from secondary level geography teachers in January–March 2010. The intention was to collect data using focus group discussions only. However, the number of participants in the focus groups was determined by the number of teachers who were willing to participate in the study in each school. As a result, there were three incidences of one teacher available to be interviewed – hence making it an individual interview, eight cases of two people in a focus group and seventeen focus groups with the number of participants ranging from three to five. This article only offers a description of some key results focusing on data collected from in-service geography teachers. The major doctoral study also included observation of school libraries, administration of questionnaires on prospective secondary level geography teachers at the National University of Lesotho and individual interviews with officials in institutions directly involved in secondary geography education in Lesotho.

## 6 DATA ANALYSIS AND INTERPRETATION

Data from the focus group discussions were analysed by examining themes in such a way that common trends were established. Narratives were compared with each other throughout the entire data-processing stage. Both the data analysis and the interpretation of the data were guided by the Leckie model and are presented in the subsequent sections.

## 6.1 DEMOGRAPHICS

The length of service of the participants ranged from less than six months to 31 years of service. The least qualified teacher had a diploma while the majority (87.9%) had bachelor's degrees and a few (10.9%) had post graduate qualifications in the form of post graduate diplomas, Honours and Master's degrees. They were qualified professionals with ample geography teaching experience and were therefore in the best position to provide accurate information pertaining to this study, and also to advise on the elements essential for their information service. The participants were class teachers (48.8%), heads of department (24.4%), ordinary teachers (22%), deputy principals (3.6%) and principals (1.2%).

## 6.2 WORK ENVIRONMENT

The participants' work environment was characterised by constraints such as lack of finances, teaching materials, facilities such as libraries and over-crowding in classrooms. Moloji et al (2008:613) note "over-sized classes, a scarcity of resources and a lack of trained teachers as an outstanding problem in Lesotho". Teacher access to information remains a problem in Lesotho with the in-service geography teachers reporting that their school libraries are stocked with outdated information bearing no relevance to geography. While in some instances the school libraries are managed by incompetent people unqualified in library and information science, in other instances libraries have no personnel.

Although most of the schools (22 out of the 28) that participated in this study had libraries, there are few schools in Lesotho that have school libraries, as noted by Kakoma (1999), IFLA/FAIFE World Report (2007) and Lesotho IFLA World Report (2010). Only four of the 22 school libraries visited were purpose-built libraries. The rest were libraries in rooms that were meant to be either classrooms, store rooms or offices. In Lesotho, where school libraries exist, they are inadequately equipped given that they lack reading materials, particularly related to geography. There is no evidence that these libraries are treated as an important component of the school curriculum as they are often manned by unqualified library assistants or professional teachers with no librarianship qualification (Kakoma 1999:121). Mafube (2005) indicates a lack of school libraries and information resources in secondary education in Lesotho, while Kakoma and Mariti (2008) emphasise a lack of information resources in tertiary education.

Most of the teachers who participated in this study (70%) had 25–30 periods per week. In Lesotho, a period is a 40-minute lesson. The average class size ranged from 40–70 learners. There was no single participating school that reported fewer than 40 learners in a class and a majority of the teachers reported between 50 and 60 learners. Another distinct feature was the heavy workloads due to the number of teaching periods per week and the number of learners in a class.

The teachers generally expressed the following dissatisfactions with regard to information provision:

- The information that they have is mostly outdated, consisting chiefly of books that were published a number of years ago. It does not satisfy their information needs because they need current information.
- There is a shortage of information generally to compare authors' views, clarify some topics and to supplement textbook information where necessary.
- The teachers expressed a dire need for teaching materials and technologies (audio-visual aids) that will help them to teach geography better.

The following responses support the points above. In this paper, some statements have been transcribed verbatim while others have been translated from Sesotho to English. The remainder have been lightly edited for grammar where necessary.

*“Truly speaking this is an old school that should be having a TV, DVD machine, projectors. If we can afford these things in our homes, why can't the school provide? There are times when I get videos from my daughter, but it becomes a problem to use in class. I find myself borrowing TV and machines from teachers who live here on campus.”*

*“The books do not provide enough information; we need to supplement them with other information from other books, sources. Some of the books we have are outdated and we need the latest editions, publications.”*

*“Really we lack resources, we lack current books, the type of books that we use recently do not provide adequate information. You know lately, even the students' textbooks lack adequate information; it is as if they are rushed into publishing so that the publishers and the authors get their money. I am really concerned about the latest books.”*

### **6.3 WORK ROLES, ASSOCIATED TASKS AND CHARACTERISTICS OF INFORMATION NEEDS**

According to Leckie et al (1996:181), professionals may have work roles such as service provider, administrator/manager, researcher, educator and student. Leckie et al (1996:181) indicate that, within the professionals' roles, there are tasks such as assessment, supervising, counseling, report writing, etc. Three work roles were identified in this study and they are discussed below: the educator role, the administrator role and non-academic roles.

#### **6.3.1 Educator role**

This is the core academic role of teachers and it is related to pedagogy and development of learning skills for learners. It involves daily interaction with learners and encompasses tasks such as acquiring the content to be taught, deriving appropriate teaching methods for delivering the content, finding teaching aids that will be used to enhance understanding, managing the classroom so that all that is planned is achieved in reasonable time,

assessing the teaching and learning process and keeping up to date with the syllabus and curriculum objectives. The tasks that trigger information needs are related to content, teaching methods, teaching aids, assessment and classroom management and this is evident in the following two statements:

*“Content ... every day I go to class, I do preparation, I have a preparation book where I have to gather information, I have to outline the content, the teaching methods, the way I will motivate them, even all the activities including how I will assess the class. Every day I go to class I have to prepare for each and every class, and gather all the information and outline it appropriately.”*

*“I need information every day because I have to deliver information every time I go to class I have to equip the learners with the necessary information. When I go to class, I have to give these kids the correct content and also enough content as required by the government.”*

It was found that the content has to be accurate, current and also adequate for the standards set by the national curriculum and syllabus.

### **6.3.2 Administrator role**

There are five administrative roles that teachers in Lesotho may assume, namely those of being an ordinary teacher, class teacher, head of department, principal or deputy principal. It was found that all the secondary geography teachers filled one of these administrative roles in addition to teaching. An ordinary teacher is responsible for the subjects that he or she teaches and has no responsibilities other than teaching, testing, marking, and report writing for his or her subject only. A class teacher, in addition to an ordinary teacher’s tasks, manages his or her classroom facilities, supervises learners, is responsible for their welfare and prepares comprehensive reports for their overall performance. A head of department has teaching tasks, supervises teachers, manages the resources of the department, is responsible for the welfare of the teachers in his or her department and allocates classes and workload to the teachers. A principal has teaching tasks, supervises both academic and non-academic staff, manages all the school’s resources, administers the school’s policies and regulations, writes reports and takes care of the welfare of students and staff. He or she has to be aware of national examinations, curriculum development issues, legislation governing education and schools, and has to bring all these to the attention of the teachers. A deputy principal assists the principal in his or her tasks. It was evident that the administrative role also demands information and this is affirmed by this statement from one head of department.

*“Yes, there is a need for information in order to perform my role as the HOD. There are times when the teachers in my department may come with problems that require me to go and find more information in order to solve them. For instance, there could be a troublesome boy who frustrates a young inexperienced teacher, and obviously such a teacher will report the matter to me first, and I have to find more information about the*

*problem, find more about the boy from his friends and even other teachers. Sometimes, I have to find more information about his parents as well and find out how the boy is generally behaving at home.”*

It was noted that the head of department searches for information in the learners’ files, minutes of meetings for general staff, departmental or even disciplinary committees.

### **6.3.3 Non-academic roles**

The study found that non-academic roles are related to extramural activities and the social, spiritual and emotional development of the learners. Teachers perform their non-academic roles through committees. Depending on the committee and on the issues that arise in the schools, this role may involve investigating issues, organising meetings, writing minutes, coaching, managing resources, decision making and policy and regulation development, among others. It also transpired that the non-academic role also requires its own information due to the issues that the committee faces. The following three statements bear testimony to this:

*“You know, being in the disciplinary committee requires information outside the school. This is because one sometimes has to refer to policies on how to discipline the learners and the teachers alike in order to avoid breaking the law. It is also important to adhere to the right procedure when taking disciplinary action against people. This is one area which needs information, in particular policy documents, teaching regulations, legislation such as Labour Code and many others.”*

*“Disciplinary committee requires us to gather information from different sources, those who are complaining and those who are ‘perpetrators’. It is important to establish the facts, so that you do not wrongly punish somebody. It is also important to find out if such an incident ever happened before and how the student was punished. What are the school regulations saying about such a case? What is the fair punishment to give in that case? We have to try to find information so that at the end we give a fair punishment that will make students to refrain from such actions. We should also try to avoid humiliating students.”*

*“Being in the committee that is concerned with the orphans, I need information about how they can be helped. We need to know more about the bursaries available for orphans, feeding schemes, sponsors, orphanage homes and many other societies that are out there to help out orphans.”*

## **6.4 AWARENESS OF INFORMATION**

The teachers who participated in this study indicated that, at the beginning of lesson planning and preparation, they started with the syllabus and then the learners’ textbooks. They reported being confident in using the syllabus documents as well as their books and in what to look for. It was evident that they did not rely on one source of information. They used a variety of sources such as colleagues, past examination question papers, the

Internet, farmers and miners in the community for topics related to farming and mining respectively. The need for different viewpoints was strongly emphasised.

*“Often I take various books and go through them and make notes and compare the different view-points from different authors. I cannot work with one book. But mainly I use books.”*

From the responses, it appeared as if the teachers already knew reputable books. They also used their personal knowledge and experience to assess the authenticity of the information from the sources that they did not know.

*“You know at JC level, the textbooks are shallow, they have conflicting information to what we know and to other books that we have. They are also failing to address the information that is required by the syllabus. At COSC level, there is no single book that addresses that syllabus adequately. A learner needs more than two or even three books, they are very expensive and we live in poverty-stricken areas. So it is a big challenge to be teaching geography.”*

The awareness of information among the participants was generally high. It was evident that, as they gained experience, they became more aware of the information around them. This was similar to the findings by Kostianen et al (2000:169) who mention that work experience seems to broaden the awareness of information and sources. These statements bear testimony to this:

*“One has to have up-to-date information. Moreover, when I gained experience, I gained more confidence, and became aware that I did not cover enough information for certain topics. Actually I should have gone deeper, and that requires more intensive reading.”*

*“I think teaching with experience calls for more research because the geography subject keeps on changing and also the syllabus and the examiners’ expectations keep on changing. Much as I just came out (of training) I felt I had enough information for these kids. You might find that when I started teaching I used to give them conflicting information, or inadequate information and soon realised that teaching is a job that requires information, therefore I have to look for more and more information.”*

The teachers were generally aware that they had a shortage of information and lacked various sources of information and they therefore made an effort to go out to get information: *“I run all over, I go to all the schools here and find information mainly because there is nothing here.”*

There was awareness that there was a need to verify the information that they were getting from the learners.

*“We sometimes bring some situation to the students so that they relate it to the new topic. I may even start by presenting a situation to them and ask them to go out and research more. However, as a teacher I always have to verify their information.”*

## 6.5 SOURCES OF INFORMATION

The main sources of information of the participants were the syllabus documents, books, colleagues in their schools and neighbouring schools as well as other colleagues in their professional associations. Colleagues teaching subjects such as development studies, agriculture and natural sciences (biology and physics) were reported to be another source that is often consulted. Personal knowledge and experience were used as the source of information to guide the process of teaching and also to guide the information-seeking process. The teachers also indicated that they frequently used the media (newspapers, TV and radio). It was evident that TV was the most predominant among the three media sources, especially among the female teachers. Younger teachers in the urban areas reported that they used the internet. In some rural schools, the farmers and miners in the communities were consulted for information on the topics relating to farming and mining respectively. Seemingly, rural schools have a working relationship with their communities.

## 6.6 INFORMATION-SEEKING

Information-seeking seemed to differ amongst the participants. Some teachers (mostly inexperienced) indicated that they started with the syllabus to establish all the details that needed to be covered for the new topic, and then moved onto books. Other teachers started with books, then went to colleagues within the department, then to teachers of subjects such as science, agriculture and development studies if the topic was related to any of these subjects.

*“When starting a new topic ... I look at the syllabus first ... if I have to start a new topic ... we look at the topic from the syllabus. Then we get to the students’ textbooks to find how much information they have for learners, then we consult our teachers’ books, until we get what we want and build a clear picture and comprehensive notes. Sometimes we go to the Internet to get more information, more examples and more activities until we feel somehow happy.”*

Williams and Cole (2007) found that teachers tend to rely on readily available resources, particularly those available in the school. Similarly, some of the participants relied on the information sources that were available in their schools. On the contrary, however, other teachers indicated that they went all out to find information; even beyond their school premises. The reason was their awareness of the lack of sources in their schools and the fact that they had established networks through their associations and these provided the information that they needed.

Factors that teachers have to consider when selecting or seeking information have been articulated by scholars such as Mundt et al (2006:11) and Perrault (2007). The participants reported that they considered the following factors when selecting and seeking information:

- The contents of the document had to address the topics on the syllabus adequately.



- The language level of the book/document, bearing in mind their learners. They preferred information that was presented in simple language and that discussed the concepts clearly and concisely.
- The document should have colourful illustrations – not only to capture attention, but also to enhance understanding of the abstract features. It was mentioned that colours were important in geography because they represented features. For instance, blue meant water, brown meant land and green meant vegetation.
- The learners’ activities included in the book were also important because they also enhanced understanding.

Teacher testimony for the points outlined above is reflected in the following three statements:

*“Often we check the syllabus; the contents of the book should address the syllabus. Diagrams are important in geography. The pictures should be in colour.”*

*“Physical geography needs colourful diagrams because some earth features are easily identified through colours. It is known that blue symbolises water, green vegetation and brown land. So, colours really help more than black and white.”*

*“At the end of each chapter, the book should have questions that learners have to answer to enhance their understanding of the chapter. You know the books that have questions at the end are useful in challenging the students and also help me out for assessment.”*

## 6.7 CHALLENGES IN INFORMATION-SEEKING

The teachers were asked to narrate the challenges that they encountered while searching for information and to suggest possible solutions. They indicated the following challenges:

- Lack of resources such as time and money.
- No access to the school’s resources such as telephones and the Internet.
- Heavy teaching loads and too many learners in a class.
- Lack of a variety of sources of information in their schools.

The above points are captured in the following statements:

*“Challenges here at school are time, we never have enough time. Funds also are a restriction. Lately it has become a great problem to go out and find information, or even to take the learners to go out on an excursion to find information. It is also difficult to bring guest speakers as they usually mention that they do not have time.”*

*“We don’t have a reliable variety of sources of information. If we had various books, old and new books, it would help because we would at least compare more books and old and new publications. We would consider the information from new books.”*

*“The loads of the classes and also all these other responsibilities make us to fall for the resources that are readily available and fail to seek more resources out there that we know and are aware of. You find that you are quite limited in exploring other areas.”*

## 6.8 OUTCOME AND FEEDBACK

The outcome and feedback of information-seeking for the participants depended on the role and tasks that led to the need for information. For instance, the educator role involved teaching with its possible outcome the successful ending of a topic. This meant that the essential elements of the topic, as required by the syllabus, had been clearly delivered to the learners. This was usually identified through the testing and evaluation given to the learners at the end of the topic with a topic being covered over a number of lessons. During marking, the teacher would get some feedback of the outcome. The desired outcome was for the learners to have understood the topic, acquired knowledge and mastered the associated skills. Some feedback may also have been realised immediately at the end of the lesson as teachers may have evaluated the lesson by asking a few questions to assess if the learners had grasped the lesson objectives.

Some teachers saw the outcome of their information-seeking reflected in the final result at the end of the national examinations if the information-seeking and information delivery had been successful. If the outcome was positive it meant that the learners had passed well. The teacher would therefore know that his or her information-seeking had been effective in the sense that the right information had been acquired and had been delivered appropriately to the learners.

The administrative role and committee role usually required information when there was a problem to be solved and/or when there was a need to address some issues. For instance, if a teacher was on the orphans committee, then such a person has to constantly know his/her orphans and look for organizations that assist the orphans. When the orphans and organisations are found, information-seeking ends. If there is a teacher or student that requires to be disciplined, then information on the procedures will be sought and when the disciplinary action has been taken then information-seeking ends.

## 7 DISCUSSION

This section is a discussion of a limited scope of findings focusing on information needs and information-seeking in teaching using the case of in-service secondary level geography teachers in Lesotho. While the previous section outlined the findings of the study according to the components of the Leckie model, this section is an interpretation of the findings based on Leckie et al (1996). Information-seeking in teaching is, in some respects, similar to other professions. This is because all the various components of the Leckie model could be identified: the teachers' work roles and associated tasks, information needs, sources of information, awareness of information, information-seeking process and the outcomes and feedback mechanisms. Wilkinson (2001:274) mentions that the five roles described by the Leckie model may not be the only roles that the professionals have; it might be that the professionals have fewer roles – or totally different roles – to those described in the Leckie model. This study identified educator, administrator and committee member roles. To some extent, the various committees

could actually be perceived as administrative. Therefore, one may even conclude that the teachers actually had two roles: educator and administrator, even though the Leckie model initially accepted outlines five roles.

According to Leckie et al (1996:182) the information needs arise out of situations pertaining to a specific task that is associated with one or more of the professionals' work roles. The information needs are not constant and can be influenced by intervening variables such as age, profession, specialisation, career stage and geographic location. It transpired that the teachers' ages affected their use of information sources such as the Internet. Geographical location and age also had an impact on the choice of information sources in that the rural schools used farmers and miners in their communities. While younger teachers used the Internet, older teachers did not use it. Career stage also influenced information-seeking given that inexperienced teachers started by consulting the syllabus document while experienced teachers went straight to the books as they probably knew what the syllabus required.

According to Leckie et al (1996:183–187) the sources of information and awareness of information are factors that affect information-seeking. Firstly, professionals seek information from various sources such as colleagues, librarians, handbooks, journals and their own personal knowledge and experience. Personal knowledge and experience are important to professionals because they have to master an advanced body of specialised knowledge before practicing. In addition, personal knowledge and experience also entail the different ways that work is conducted or practice is done within a profession. There was some evidence that the teachers studied consulted colleagues in the same field and in other subject areas such as the sciences, agriculture and development studies. They consulted their teachers' guides and learners' textbooks. Personal knowledge and experience were used as their source of information to guide the process of teaching and also to guide the information-seeking process. The journals and the librarians were not used by the teachers because most of the schools had neither journals nor qualified school librarians. A few schools that had libraries lacked current information related to geography. Where libraries existed they were manned by unqualified people who were not capable of providing a pertinent information service.

Leckie et al (1996:185) point out that knowledge of various information sources and the perceptions formed about the information retrieved play a crucial role in the overall process of information-seeking. They argue that knowledge and awareness of information, in particular content, can determine how the information-seeking will take course. They also mention that professionals will consult sources that they are familiar with and with which they have had prior success in filling an earlier information need. Professionals consult sources that they trust will provide accurate information in a preferred format. Furthermore, professionals use sources that they know will deliver the information on time and are accessible in terms of distance and costs. It transpired from the participants that they use sources that they are familiar with and they trust will provide the accurate information.

In the model that was guiding this study the outcomes are the results of the information-seeking process. It may be considered as the end result of the work related requirements of specified work roles and tasks (Leckie et al 1996:187). In this model, the optimal outcome is when the information need is met and the professional has accomplished his/her task. However, it is possible that the outcome does not meet the information need such that the task is not accomplished and therefore further information-seeking is pursued. This has been outlined as the feedback loop on the model (Leckie et al 1996:187). When the teachers start, their information-seeking process, they start with the syllabus, then books (textbooks and teachers' guides). If the information is not enough or unsatisfactory, then more sources such as colleagues, additional books and the internet are consulted. There is evidence that the teachers go all out to find information and only rest when they feel they have some information to accomplish the tasks.

Baker (2004:11) indicates that the Leckie model does not address information giving in the information-seeking process of professionals, and yet some professionals have the task of information sharing and giving. There was considerable evidence of information sharing and giving in the study. This is done through the work of the professional associations where planning of the work is done together. In the association, common internal examinations are prepared, setting the questions and preparing marking schemes. In the schools, evidence of information giving and sharing occurs in meetings, informal chats with colleagues and through team teaching.

The Leckie model was helpful as a framework guiding the doctoral study. The work roles and associated tasks of the secondary geography teachers, their characteristics of the information needs, and the information-seeking patterns of the teachers including the challenges that affect their information-seeking as well as the information sources that they use were identified.

## **8 CONCLUSION**

The intention of this article was to report on some of the descriptive results of the information-seeking behaviour of in-service secondary level geography teachers in Lesotho using the Leckie model as the theoretical framework. This flows from a doctoral study in progress which investigates the information needs and information-seeking patterns of these teachers in order to guide the design and implementation of their information service. In comparison to the five roles identified in the Leckie model, this study identified three work roles: educator role, administrative role and non-academic role. In addition, the participants tend to use syllabus documents, learners' textbooks and colleagues as predominant information sources. They prefer information that will be easily understood by their learners and go to a great length to seeking information related to what they will deliver in class.

The work environment of the participants is characterised by lack of teaching materials with heavy work-loads due to number of teaching periods per week as well as the

number of learners per class. The participants expressed dissatisfactions with regard to the information that they have in their schools. They indicated general shortage of information, lack of current information, lack of audio-visual teaching materials and technologies for teaching geography.

This study has contributed knowledge on information-seeking behaviour of teachers in Lesotho. It revealed these teachers' work environment, roles, information needs and information-seeking process including preferred information sources. The participants are professionals and are therefore regarded as active information users, yet they seem to face challenges of information access. It is envisaged that through the findings of this study, appropriate information services will be proposed.

## REFERENCES

- Baker, LM. 2004. The information needs of female police officers involved in undercover prostitution work. *Information Research* 10(1). <http://informationr.net/ir/10-1/paper209.html> (Accessed 10 August 2011).
- Barker, LJ. 2009. Science teachers' use of online resources and the digital library for earth system education, in *Proceedings of the 9<sup>th</sup> ACM/IEEE-CD Joint Conference on Digital libraries*. <http://portal.com.acm.org/citation.cfm?id=1555402> (Accessed 4 August 2011).
- Bronstein, J. 2010. Selecting and using information sources: source preferences and information pathways of Israeli library and information science students, in *Proceedings of Information-seeking in Context Conference*, 28 September – 2 October. University of Murcia:61–76.
- Byström, K & Järvelin, K. 1995. Task complexity affects information-seeking and use. *Information Processing and Management* 31(2):191–213.
- Case, DO. 2006. Information behavior. *Annual Review of Information Science and Technology* 40:293–327.
- Case, DO. 2007. *Looking for information: a survey of research on information-seeking, needs, and behaviour*. 2<sup>nd</sup> ed. Amsterdam: Elsevier.
- Choo, CW, Detlor, B & Turnbull, D. 1999. Information-seeking on the web – an integrated model of browsing and searching. ASIS 1999 Annual Meeting Contributed Paper. <http://choo.fis.utoronto.ca/fis/respub/asis99/> (Accessed 30 August 2011).
- Choo, CW, Detlor, B & Turnbull, D. 2000. *Web work: information-seeking and knowledge work on the World Wide Web*. Dordrecht: Kluwer Academic.
- Conroy, G, Parker, S & Davies, S. 2000. The European information needs of secondary school teachers in Scotland: recent developments in the provision of information to schools and colleges. *ASLIB Proceedings* 52(7):254–263.
- Courtright, C. 2007. Context in information behavior research. *Annual Review of Information Science and Technology* 41:273–295.
- Dervin, B. 1983. An overview of sense-making research: concepts, methods, and results to date. Paper presented at the annual meeting of the International Communication Association, Dallas, TX, May. <http://communication.sbs.ohio-state.edu/sense-making/art/artabsdervin83smoverview.html> (Accessed 15 September 2010).

- Dervin, B. 1998. Sense-making theory and practice: an overview of user interests in knowledge seeking and use. *Journal of Knowledge Management* 2(2):36–46.
- Du Preez, M & Fourie, I. 2009. The information behaviour of consulting engineers in South Africa. *Mousaion* 27(1):137–158.
- Du Preez, M & Fourie, JA. 2010. Development of a conceptual model for studying engineers' information behaviour. *Mousaion* 28(1):62–88.
- Ellis, D. 1989. A behavioural approach to information retrieval system design. *Journal of Documentation* 45(3):171–212.
- Ellis, D. 1993. Modelling the information-seeking patterns of academic researchers: a grounded theory approach. *Library Quarterly* 63(4):469–486.
- Fisher, KE & Julien, H. 2009. Information behavior. *Annual Review of Information Science and Technology* 43:317–358.
- Hepworth, M. 2007. Knowledge of information behaviour and its relevance to the design of people-centred information products and services. *Journal of Documentation* 63(1):33–56.
- IFLA/FAIFE World Report. 2007. In Bothma, TJD (ed). *Access to libraries and information: towards a fairer world*. IFLA/FAIFE World Report Series, Vol VII. The Hague: IFLA/FAIFE.
- Ingwersen, P. 1996. Cognitive perspectives of information retrieval interaction: elements of a cognitive IR theory. *Journal of Documentation* 52(1):3–50.
- Ingwersen, P & Järvelin, K. 2005. *The turn: integration of information-seeking and retrieval in context*. Dordrecht: Springer.
- Kakoma, A. 1999. School libraries in Lesotho. *Information Development* 15(2):120–126.
- Kakoma, A & Mariti, LM. 2008. The role of Lesotho academic libraries in the attainment of MDGs, in Njobvu, B & Koopman, S (eds). *Libraries and information services towards the attainment of the UN Millennium Development Goals*. Munich: Saur:99–113.
- Kerins, G, Madden, R & Fulton, C. 2004. Information-seeking and students studying for professional careers: the cases of engineering and law students in Ireland. *Information Research* 10(1). <http://informationr.net/ir/10-1/paper208.html> (Accessed 30 August 2011).
- Kostiainen, E, Valtonen, MR & Vakkari, P. 2003. Information-seeking in pre-trial investigation with particular reference to records management. *Archival Science* 3:157–176.
- Krikelas, J. 1983. Information-seeking behavior: patterns and concepts. *Drexel Library Quarterly* 19(2):5–20.
- Kuhlthau, CC. 1991. Inside the search process: information-seeking from the user's perspective. *Journal of the American Society for Information Science* 42(5):361–371.
- Kuhlthau, CC. 1993. A principle of uncertainty for information-seeking. *Journal of Documentation* 49(4):339–355.
- Lan, C & Chang, Y. 2002. The advanced study of information behaviour of biology teachers in junior high school. *Journal of Library and Information Science (USA/Taiwan)* 28(2):39–48.
- Landrum, TJ, Cook, BG, Tankersley, M & Fitzgerald, S. 2002. Teacher perceptions of the trustworthiness, usability and accessibility of information from different sources. *Remedial and Special Education* 23(1):42–48.

- Landry, CF. 2006. Work roles, tasks and the information behaviour of dentists. *Journal of the American Society for Information Science and Technology* 57(14):1896–1908.
- Leckie, GJ, Pettigrew, KE & Sylvain, C. 1996. Modelling the information-seeking professionals: a general model derived from research on engineers, health care professionals and lawyers. *Library Quarterly* 66(2):161–193.
- Lesotho IFLA World Report. 2010. [http://www.ifla-world-report.org/cgi-bin/static.ifla\\_wr.cgi](http://www.ifla-world-report.org/cgi-bin/static.ifla_wr.cgi) (Accessed 30 August 2011).
- Lundh, M. 2005. Information-seeking and teachers: a study of high school teachers in the transition from education to occupational practice. Masters' dissertation, University College of Borås. <http://hdl.handle.net/2320/1316> (Accessed 12 August 2011).
- Madden, A, Ford, N, Miller, D & Levy, P. 2005. Using the Internet in teaching: the views of practitioners. *British Journal of Educational Technology* 36(2):255–280.
- Mafube, M. 2005. The role of school library in promoting quality education. Paper presented at the Botswana, Lesotho, Swaziland and Namibia (BOLESWANA) Educational Research Symposium, Windhoek, 6–9 July 2005.
- Marchionini, GM. 1995. *Information-seeking in electronic environments*. England: Cambridge University Press.
- Mardis, MA. 2009. Classroom information needs: search analysis form a digital library for educators. *D-LIB Magazine*. 15(1/2). <http://webdoc.sub.gwdg.de/edoc/aw/d-lib/january09/mardis/01mardis.html> (Accessed 28 May 2009).
- Moloi, F, Morobe, N & Urwick, J. 2008. Free but inaccessible primary education: a critique of the pedagogy of English and Mathematics in Lesotho. *International Journal of Educational Development* 28:612–621.
- Mundt, M, Stockert, K & Yellesetty, L. 2006. The information behaviour of teachers. [http://katestockert.com/LIS510\\_Information\\_Behaviour\\_of\\_Teachers.pdf](http://katestockert.com/LIS510_Information_Behaviour_of_Teachers.pdf) (Accessed 28 May 2009).
- Niedźwiedzka, B. 2003. A proposed general model of information behaviour. *Information Research* 9(1). <http://informationr.net/ir/9-1/paper164.html> (Accessed 11 August 2011).
- Noh, T, Kang, S & Scharmann, LC. 2004. Perceived needs of Korean science teachers majoring in chemical education and their preferences for online and on-site training. *International Journal of Science Education* 26(10):1269–1289.
- Nwokedi, VC & Adah, J. 2009. Information needs of post-primary school teachers in Jos, Plateau State, Nigeria. *Information Technologist* 6(2). <http://ajol.info/index.php/ict/article/view/52727> (Accessed 30 May 2010).
- Pattulli, MC. 2008. Teachers' perspectives and contextual dimensions to guide the design of N.C. history learning objects and ontology. *Information Processing and Management* 44:635–646.
- Perrault, AM. 2007. An exploratory study of biology teachers' online information-seeking practices. *School Library Media Research*. Volume 10. <http://www.ala.org/ala/mgrps/divs/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume10/contents.cfm> (Accessed 2 February 2008).
- Sánchez, G & Valcàrcel, MV. 1999. Science teachers' views and practices in planning for teaching. *Journal of Research in Science Teaching* 36(4):493–513.

- Savolainen, R. 1995. Everyday life information-seeking: approaching information-seeking in context of “way of life”. *Library and Information Science Research* 17(3):259–294.
- Savolainen, R. 2005. Everyday life information-seeking, in Fisher, KE, Erdelez, S & McKechnie, EF (eds). *Theories of information behaviour*. Medford: Published for the American Society for Information Science and Technology by Information Today:143–148.
- Shanmugam, A. 1999. Information-seeking behaviour of trainee teachers in selected teacher training colleges in Malaysia. *Malaysia Journal of Library and Information Science* 4(1):1–26.
- Snyman, M & Heyns, D. 2004. Die inligtingbehoefte van Afrikaans T1-onderwysers. *Mousaion* 22(2):211–229.
- Tahee, N, Cha, J, Kang, S & Scharmann, LC. 2004. Perceived professional needs of Korean science teachers majoring in chemical education and their preferences for online and on-site training. *International Journal of Science Education* 26(10):1269–1289.
- Tanni, M, Sormunen, E & Syvänen, A. 2008. Prospective history teachers’ information behaviour in lesson planning. *Information Research* 13(4). <http://informationr.net/ir/13-4/paper374.html> (Accessed 21 March 2009).
- Taylor, RS. 1991. Information use environments. *Progress in Communication Sciences* 10:217–255.
- Twidle, J, Sorensen, P, Childs, A, Godwin, J & Dussart, M. 2006. Issues, challenges and needs of student science teachers in using the Internet as a tool for teaching. *Technology, Pedagogy and Education* 15(2):207–221.
- Wilkinson, MA. 2001. Information sources used by lawyers in problem-solving: an empirical exploration. *Library & Information Science Research* 23:257–276.
- Williams, D & Coles, L. 2007. Evidence-based practice in teaching: an information perspective. *Journal of Documentation* 63(6):812–835.
- Wilson, TD. 1981. On user studies and information needs. *Journal of Documentation* 37(2):3–15.
- Wilson, TD. 2000. Human information behaviour. *Informing Science* 3(2):49–56.
- Wilson, TD. 2006. 60 years of the best in information research: on user studies and information needs. *Journal of Documentation* 62(6):658–670.
- Wilson, TD & Walsh, C. 1996. Information behaviour: an interdisciplinary perspective. [informationr.net/dw/publ/infbehav/cont.html](http://informationr.net/dw/publ/infbehav/cont.html) (Accessed 23 March 2010).
- Wu, M, Chen, S & Hseih, M. 2005. A study of elementary school teachers’ searching behaviour for instructional resources on the Internet. *Journal of Educational Media and Library Sciences* 42(4):481–498.



# CONTEXTUALISING THE USE OF ICTS IN THE PUBLIC SECTOR, THE CASE OF SELECTED GOVERNMENT DEPARTMENTS IN KWAZULU-NATAL

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## ABSTRACT

The study reports on the types, usage and availability of information and communication technologies (ICTs) in four selected government departments in KwaZulu-Natal. In order to achieve the stated aim, the study answered the following research questions: What is the purpose of using ICTs in government departments? How frequently do the civil servants surveyed use ICTs for work purposes? Which ICTs do the civil servants consider effective in improving work productivity in government departments? What are the civil servants' recommendations for improving ICT usage in government departments? The study was informed by the diffusion of innovations theory. Mixed methods were adopted, employing aspects of both quantitative and qualitative approaches. Multistage probability samples were used to select the elements for the survey method. A questionnaire was used to collect quantitative data. The data was analysed using thematic categorisation and tabulation, and the findings were presented descriptively. The findings show that a variety of ICTs have been adopted in the sector. All civil servants surveyed indicated that they used ICTs to communicate with their colleagues and to disseminate departmental information. The most popular recommendations included the need for sufficient and coherent government policies regulating the training of staff in the utilisation of ICTs in the sector. Detailed recommendations for further study are provided.

## KEYWORDS

Civil servants, ICTs, impact, public sector use, social informatics

## 1 INTRODUCTION

Information and communication technologies (ICTs) are perceived to be key catalysts in current and future social and organisational changes. ICT is a compound term that

is used to refer to the convergence of a wide array of new technologies currently being developed and used in the creation, processing and transmission of information. Broadly speaking, these technologies encompass all aspects of data/information recording, handling and transmission, and include computers, telecommunications, satellites, fibre optics, video-based multimedia applications, automated speech outputs and electronic broadcast technologies, to name a few. The term ‘information and communication technologies’, according to Ngenge (2003:1–2), usually also refers to a wide variety of applications, such as electronic mail (e-mail), word processors, video-editing programs and web browsers. ICTs are credited with their transformative capacity in national economies, organisations and the global economy (Singh & Raja, 2010:3). For nations, ICTs are assumed to offer significant potential benefits for socioeconomic development and thus represent a promising way to lead developing nations to a path of more rapid development (UNDP 2001: section 2.1.1). According to Kling, Rosenbaum and Sawyer (2005:23) and Unwin (2009:7), ICTs have been portrayed “as a kind of panacea for a multitude of the world’s problems” and as “an important catalyst that will strengthen developing countries’ position in the information society”.

For organisations, ICTs provide the competitive advantage necessary to face the challenges of the new emerging global economy (Kling et al 2005:23). At global level, ICTs are intimately involved in creating one global space due to their ability to overcome temporal and spatial limits by setting up new modes of work and facilitating speedy communication and organisation across time and space (Law, Pelgrum & Plomp 2008:1; Plomp 2009:275; Walsham 2001:21). It is generally acknowledged that the information and knowledge age is here, and has in fact been with humankind since the last decades of the second millennium (Comminos, Esselaar, Gillwald, Moyo & Naidoo 2010:2; Thioune 2003:6). The notion that ICTs are pre-eminent for faster development, especially in the underdeveloped countries, is pervasive and momentum is gathering on a global scale to support the development, diffusion, use and appropriation of ICTs in knowledge-poor countries and regions in Africa and Asia in particular (Comminos et al 2010:2; Thioune 2003:6). The founder of social informatics, Kling (2000), supported by Le Roux (2009), Millbery and Stuart (2010:2) and Singh and Raja (2010:5), observes that ICTs have brought about a dramatic reduction in the cost and time involved in storing, processing and transmitting information, leading to a fundamental reshaping of the public sector and society as a whole, and are generating changes in markets, private and public sectors, and economies in the more and less developed world.

## **2 STATEMENT OF THE PROBLEM**

This study on social informatics is important, particularly in Africa where the utilisation of ICTs is either low or underdeveloped (Berleur, Nurminen & Impagliazzo 2006:08; Kling 2000; Mbatha 2009; Mutula 2008; Mutula & Mostert 2008; Ngulube 2007; Ntetha 2010). In terms of human needs, the use of ICTs has been categorised by numerous researchers as both fundamental and healthy, especially in public offices where the impact and

consequences of ICTs take into account the interaction between institutions and society, particularly in government departments (Berleur et al 2006:8; Mbatha 2009; Mutula & Mostert 2008; Ntetha 2010). The social aspects of computers, telecommunications and related technologies are crucial in shaping organisational and social relations and in enhancing the ways in which social settings influence the use and design of ICTs.

In Africa, and particularly in KwaZulu-Natal (KZN) in South Africa, office transactions remain dated, with little or no acknowledgement of the social and technological benefits of computerisation in workplaces and organisations (Mbatha 2009; Ntetha 2010). This is despite the notions and labels accredited to the role of social informatics in integrating and building on bodies of research, such as ‘computers and society’, ‘social impacts of computing’, ‘social issues of computing’, ‘social analysis of computing’ and ‘behavioural information systems’. Very little has been done to integrate this knowledge through research. It was believed that a study on social informatics in the KZN government, focusing on civil servants, would enable civil servants to extend their abilities in accessing data and communication.

It is common for many technology-centred accounts of new ICTs to emphasise the ways in which they enable new kinds of actions that were previously more costly, difficult or impossible. For example, ICTs would enable the civil servants to drastically reduce some of the communicational restrictions of space and time. In short, the use of ICTs by civil servants in government departments would completely restructure the public sector. A recent study conducted by Ntetha (2010) on social informatics in selected government departments in KZN established that, in some government departments such as Social Development and Education, the use of ICTs by some civil servants is generally low in terms of both frequency and variety. A study by Williams, Wilson, Richardson, Tuson, and Coles conducted as far back as 1998, supported by the study done by Ntetha (2010), also established that the use of ICTs by some civil servants is generally restricted to word processing and the use of specific applications. While Williams et al (1998) noted that civil servants made more use of a range of generic computer applications such as spreadsheets and presentation software, word processing still dominated their use of ICTs. Williams et al (1998) further observed that other types of ICTs, such as the Internet and Web, databases and video conferencing, were used relatively less. Ntetha’s study established that some ICT tools, such as video conferencing, are still not available in the targeted departments. Furthermore, in Ntetha’s study, civil servants identified a range of issues that they regarded as inhibitors to their effective use of ICTs, particularly lack of access or availability of hardware and software, and lack of ICT education, skills and knowledge.

### **3 AIM OF THE STUDY**

The article reports on the adoption and utilisation of ICTs by civil servants in selected government departments in KwaZulu-Natal.

## 4 RESEARCH QUESTIONS

In order to achieve the stated aim, the following research questions had to be answered:

- a. What is the purpose of using ICTs in government departments?
- b. How frequently do the civil servants use ICTs for work purposes?
- c. Which ICTs do civil servants consider vital for improving work productivity in government departments?
- d. What are the civil servants' recommendations for improving ICT usage in government departments?

## 5 LITERATURE REVIEW

ICTs are transforming the landscape in the public sector, and progress is being made daily in making information available to the citizenry. Kaisara and Pather (2009:4) observe that ICTs are shrinking the traditional barriers of time and space while increasing the rate of growth of the amount of knowledge; information can be transmitted faster, in greater bulk and more easily than ever before, making human endeavours, in all spheres of life, appear limitless. Information is, in many ways, the lifeblood of most organisations. This is nothing new, but the use of ICTs has revolutionised how information is gathered, communicated and analysed. Since the 1950s computers have been used by organisations to support their information processing needs, so that today all but the very smallest of businesses are heavily reliant on them (Bolc, Makowski & Wierzbicki 2010:203; Yull, Jarvis & Lawson 2005:39). The development of the capacity to use computers for communication has been perhaps the most revolutionary event in the world in the last twenty years. The use of communication tools can produce direct benefits to its users: they can make it cheaper, easier and quicker to communicate with people (Agard 2010; Powell 2003:207).

Over the past decade, the Web has had far-reaching implications on the way in which information is shared and services are rendered by both public and private organisations (Kaisara & Pather 2009:4). Kaisara and Pather further note that an important issue on the research agenda has been the adoption of the Web in the public sector in the form of electronic government or e-government. Authors such as Evans and Yen (2006) and Mutula (2008) show that the benefits brought about by e-government include increased convenience for citizens in areas such as filing tax returns, increased transparency of government activities and greater access to government information. In South Africa's young democracy, there continue to be high expectations of the government with regard to improved service delivery and better consultation with citizens. Such expectations are not unique to this country, prompting Mutula (2008:235) to call on all governments to recognise that the implementation of e-government systems affords them the opportunity to enhance service delivery and good governance.

The implementation of e-government has been widely acclaimed in that it provides new impetus to deliver services quickly and efficiently (Evans & Yen 2006:208). Kitaw

(2006:7) and the World Bank (2008) define e-government as the use of ICTs such as wide area networks, the Internet and mobile computing by government agencies in order to transform relations with citizens, businesses and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with businesses and industry, citizen empowerment through access to information and more efficient government management. The resulting benefits include less corruption, increased transparency, greater convenience, revenue growth and cost reductions (World Bank 2008). Likewise, UNESCO (2008) describes e-governance as the public sector's use of ICTs to improve information and service delivery, encourage citizen participation in decision-making processes, and make the government more accountable, transparent and effective.

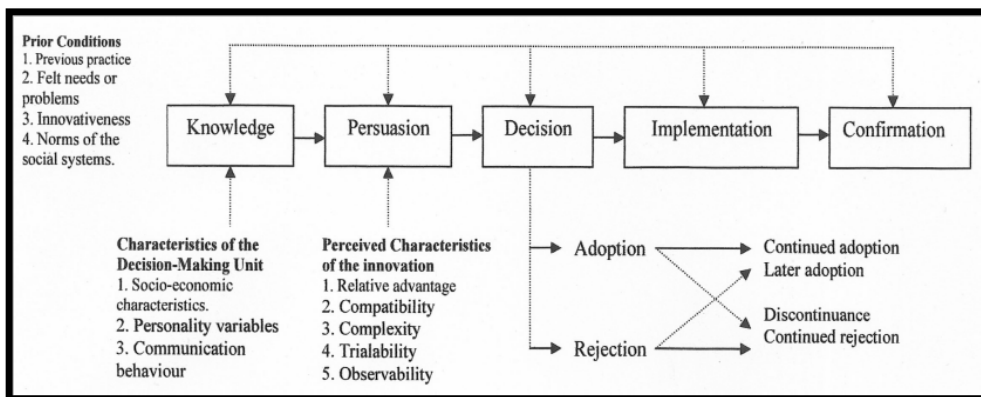
The government, as the biggest service provider to the country's citizens, should ensure that all people, irrespective of race, religion and education, receive equal treatment, services and access to information. The ICT tools used by the government should therefore be able to reach all people, even in remote areas. ICT tools are able to give citizens a platform to voice their complaints and concerns, even when they are not able to contact government offices directly. Citizens should, for example, be given access to the telephone numbers of the various departments, as well as e-mail addresses and cellphone numbers, so that they can communicate with civil servants at any time (Royal Government of Bhutan 2006). According to Van Jaarsveldt (2008), when a government decides to introduce e-government into its service delivery systems, it should ensure that the mindset of the public servants is changed, and that they agree with its inception, since people normally fear change, especially with new technologies. Secondly, the government should inform and engage with the public to convince them of the importance and advantages of e-governance and the use of ICTs. For e-government to make an impact on service delivery, there needs to be interaction and partnerships between all stakeholders – customers, the government, private organisations, businesses, and so on.

## **1.1 DIFFUSION OF INNOVATIONS THEORY**

Rogers's framework (1995), the diffusion of innovations theory, was found useful as the study sought to understand the diffusion and use of modern ICTs in the government departments under investigation. Clarke (1999) observes that Rogers's theory has been used as the theoretical basis for a number of information systems projects. Rogers (1995:21) also notes that the theory has been widely used to investigate diffusion of organisational and societal innovations. Thus, the theory's application to information technology and organisational and societal relations made it the most appropriate theoretical framework for this study. Some inventions, like the cellphone, take the world by storm, while others (e.g. video conferencing) seem to fail. Some (like the fax machine) lie dormant for decades, but when their time comes, their use spreads rapidly, even explosively. Conversely, most innovations (depending on their purpose, need and acceptance) often achieve slow penetration at first, but then grow quickly as their adoption and rate of use increases. Others may grow fast in the beginning but slow down as their use is exceeded

by newer, simpler and cheaper technology. A good example here is the use of broadband Internet access. Its adoption and utilisation are directly related to its availability, speed and affordability, both to government departments and the general public.

According to the diffusion of innovations theory, innovations are more readily adopted when they provide a relative advantage compared to older ideas, and even more so if they are compatible with the existing value system of the adopter. Rogers (1995:23) postulates that there are certain characteristics that determine the rate at which an innovation is adopted by a social system, and that these characteristics include relative advantage, compatibility, complexity, trialability and the observability of the innovation. Numerous researchers such as Kling (2000) and West (2005) have pointed out that the escalation of ICTs has had a considerable impact on the way governments function. In his study, West (2005) further observes that the use of ICTs in government (or e-government) is on the rise, with 19% of all government organisations worldwide offering online services, and South Africa is no exception. Rogers's model of the innovation-decision adoption process emphasises the role of individual behaviour in the technology adoption process (see Figure 1). The model maps the actions taken and the choices made, as an individual evaluates an innovation and decides whether or not to incorporate it into an ongoing practice.



**Figure 1: Innovation decision process (model)**

Adapted from Rogers (1995:163)

## 6 METHODOLOGY

A survey targeting key government departments was used to collect data. Because of the diverse and dispersed nature of the public sector in South Africa, the scope of the study was narrowed to government departments in KZN. In order to obtain a representative sample, the systematic sampling method was applied. In this technique, five out of 11 suitable district municipalities were selected, where every second district was chosen from a list. The sample size for the whole study was 260 managers. A total of 152 questionnaires were completed and returned. The five district municipalities selected

were uMgungundlovu, uMzinyathi, Zululand, uThungulu and Sisonke. In these districts, four government departments were targeted, namely the Departments of Arts and Culture, Home Affairs, Education, and Health. These departments were sampled using purposive and systematic sampling techniques. Three selection strategies were used: (i) Identifying highly dispersed and service-intensive departments; (ii) Categorising the personnel in the selected departments into top-, medium- and lower-level management; and (iii) Dividing the service areas into rural or urban-based centres. The data collected was analysed using thematic categorisation and tabulation, and the findings were presented descriptively.

## **7 RESULTS**

The sections below provide the demographics of the respondents, the purpose of using ICTs in government departments, frequency of civil servants using ICTs for work purposes, ICTs that civil servants consider vital for improving work productivity in government departments, and civil servants' recommendations for improving ICT usage in government departments.

### **7.1 DEMOGRAPHIC PROFILE OF THE RESPONDENTS**

In terms of job titles, the respondents ranged from assistant managers to district managers, with the majority (33; 22%) holding the position of assistant manager. Most of the respondents (66; 43%) had bachelor's degrees. A study by Ayoo (2001) established that most professionals above the age of 40 years in developing countries are often conservative and slow in keeping pace with ICT advancements. This study established that a large number of respondents were between the ages of 40 and 49 (47%), followed by respondents in the 30–39-year age group (28%). Respondents in the age group of over 50 years and those between 20 and 29 ranked third and fourth, respectively. It was also vital to assess gender proportionality in the study, as it is a widely held view that males dominate use of and access to ICTs. Earlier studies have identified women and girls as disadvantaged in their uptake of ICTs (Ngenge 2000). Minishi-Majanja and Kiplang'at (2003:70) have also suggested that gender disparity among professionals in Africa can be attributed partly to the educational system and partly to factors inherent in society at large. Shaw and Gant (2002:517) argue that it has been empirically proven that women and men differ in their attitudes towards, comfort with, and anxiety about, computer technology. The results of the study reported on here indicate that there was clear male dominance (89; 59%) in the sample population. In terms of the level of management, most of the respondents (68; 45%) were top managers.

### **7.2 REASONS FOR USING ICTS**

It was important for this study to capture the varying opinions and attitudes of the respondents related to ICT usage in their respective departments. The respondents were provided with possible options to choose from and asked to rate each one on a scale of

1 to 4, depending on how applicable it was to their situations (1 = strongly disagree, 4 = strongly agree). Appropriate multiple answers to closed questions were selected. The table below shows the number of responses for each rating and the corresponding percentages.

**Table 1: Reasons for using ICT tools and services (N=152)**

Use of ICT tools and services	Strongly agree		Agree		Disagree		Strongly disagree	
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%
To communicate with colleagues	152	100	-	-	-	-	-	-
To disseminate information	152	100	-	-	-	-	-	-
For research purposes	89	59	32	21	31	20	-	-
For information retrieval	34	22	44	29	33	22	41	27
For marketing purposes	34	22	41	27	54	36	23	15
For word processing	152	100	-	-	-	-	-	-
For Internet access	152	100	-	-	-	-	-	-
For spreadsheet	152	100	-	-	-	-	-	-
For records management	122	80	30	20	-	-	-	-
For presentations	108	71	44	29	-	-	-	-
For database searching	12	8	34	22	65	43	41	27
For printing	152	100	-	-	-	-	-	-
Advertising	33	22	54	36	43	28	22	14
Purchasing	17	11	45	30	48	32	42	28
Information gathering	49	32	38	25	54	36	11	7

\* The table above represents multiple responses

The survey revealed that all the respondents (152; 100%) used ICTs to communicate with fellow colleagues, to access the Internet, for spreadsheet purposes, for printing, for word processing and to disseminate departmental information. When combining positive phenomena in scales 1 and 2 under research purposes, the study was able to conclusively determine that the majority of the respondents used ICTs for research purposes (levels 1 and 2: combined total 121 or 80%). An <average number??> used ICTs to retrieve information (i.e. levels 1 and 2: 78 or 51%).

Furthermore, the survey results show that the number of those who used ICTs for records management was significant (combined positive phenomena in levels 1 and 2, which translates to 152 ratings or 100%), while again a total rating of 152 (100%) at the combined scales 1 and 2 illustrates that all the respondents used ICTs for presentation purposes. Also, the results show that an average number used ICTs for database searching (i.e. levels 1 and 2: 46 or 30%). This is also true of those who used ICTs for advertising purposes. This is evident



by a total rating of 87 (57%) at the combined levels 1 and 2 on the Likert scale. An average number revealed that they used ICTs for purchasing purposes (levels 1 and 2: combined total 62 or 41%), while 87 (57%) of the respondents used ICTs to gather information.

### 7.3 FREQUENCY OF USING ICTS

The respondents were required to give responses to the question, “How frequently do you use the following ICT tools and services for work purposes?” A list of ICT tools and services was provided, and they were asked to rate each one of them on a Likert-type scale of 5 (daily), up to 1 (never) as it applied to their situations. The table below provides the responses.

**Table 2: Frequency of using ICTs (N=152)**

ICTS	Daily		Weekly		Monthly		Sometimes		Never	
	F	%	F	%	F	%	F	%	F	%
Data projectors	-	-	11	7	98	64	43	28	-	-
Laptop	152	100	-	-	-	-	-	-	-	-
Fax machine	67	44	85	56	-	-	-	-	-	-
V conferencing	-	-	-	-	-	-	-	-	-	-
PC	152	100	-	-	-	-	-	-	-	-
Internet	152	100	-	-	-	-	-	-	-	-
Intranet	152	100	-	-	-	-	-	-	-	-
Databases	21	14	22	14	10	7	99	65	-	-
Telephone	152	100	-	-	-	-	-	-	-	-
Copy machine	26	17	33	22	22	14	71	47	-	-
Printer	152	100							-	-
Scanner	-	-	-	-	57	38	95	63	-	-
E-mails	152	100	-	-	-	-	-	-	-	-

Table 2 shows that an average number of participants said they used data projectors monthly (98; 64%). ICT tools such as video cameras (72; 47%) and video recorders (91; 60%) were sometimes used by the respondents. Tape recorders are hardly used in government departments with a significant number of the respondents (103; 68%) revealing that they had never used such ICTs.

The results further indicate that all the respondents (152; 100%) used laptops, personal computers, printers, Internet, intranet, telephones, e-mail and mobile phones on a daily basis. All the respondents (152; 100%) indicated that they had never used video conferencing in their departments as it is not accessible in the government departments surveyed. When asked to comment on the use of databases, a significant number (99; 65%) also revealed that they sometimes used them for work purposes. With regard to the use of scanners, the majority of respondents (95; 63%) said they sometimes used them.

The results show that copy machines are sometimes used in government ministries, as evidenced by the significant number of respondents (71; 47%) who revealed that they sometimes used them for work purposes. The majority of the respondents (85; 56%) revealed that they used fax machines daily.

#### 7.4 ICTs WHICH CIVIL SERVANTS CONSIDER EFFECTIVE IN WORK CREATIVITY AND PRODUCTIVITY

One of the objectives of the study was to establish ICTs that civil servants consider effective in improving work productivity in government departments. Respondents were provided with a list of ICT tools and services and asked to rate them on a Likert-type scale of 1 to 4 as it applied to their situations (1 = very effective; 4 = not effective). Appropriate multiple answers to closed questions were selected by the respondents.

**Table 3: Effective ICTs in work creativity and productivity (N=152)**

ICTs	Very effective		Effective		Less effective		Not effective	
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%
Data projectors	76	50	44	29	32	21	-	-
Laptop	152	100	-	-	-	-	-	-
Fax machine	152	100	-	-	-	-	-	-
V conferencing	-	-	-	-	-	-	-	-
PC	152	100	-	-	-	-	-	-
Internet	152	100	-	-	-	-	-	-
Intranet	152	100	-	-	-	-	-	-
Databases	31	20	87	57	32	21	2	1
Telephone	152	100	-	-	-	-	-	-
Copy machine	103	68	49	32	-	-	-	-
Printer	152	100	-	-	-	-	-	-
Scanner	99	65	43	28	10	7	-	-
E-mails	152	100	-	-	-	-	-	-

When asked to rate ICTs in terms of their effectiveness with regard to work productivity and creativity in their respective departments, all the respondents (152; 100%) were of the view that ICTs such as e-mails, printers, telephones, mobile phones, intranet, Internet, computers, fax machines and laptops were very effective in work creativity and productivity. The results further reveal that copy machines were very effective in improving work creativity and productivity amongst the civil servants in government ministries (levels 1 and 2: combined total 152 or 100%). When asked to comment on scanners, the majority of respondents (99; 65%) made it known that scanners were very effective in improving work creativity and productivity. Furthermore, the survey shows that an average number of respondents considered data projectors to be very effective (76; 50%).

## **7.5 RECOMMENDATIONS FOR IMPROVING THE USE OF ICTS IN GOVERNMENT DEPARTMENTS**

One of the objectives of the study was to come up with solutions for improving the use of ICTs in government departments. Consequently, the respondents were required to discuss and indicate contextual conditions that need to be adapted in order to enhance the positive consequences of ICTs in government departments. The respondents generally recommended the following:

- All necessary resources should be provided to ensure that all equipment, including Internet access, functions properly and that administrative functions are performed effectively.
- All equipment and electronic resources should be available and in working order all the time.
- Money should be set aside for the purpose of increasing bandwidth to provide a speedy, reliable and consistent Internet connection.
- Network facilities and computers should be upgraded.
- There must be sufficient and coherent government policies regulating the training of staff in the utilisation of ICTs in the sector.
- ICT access should be provided to all staff.
- The budget for ICTs should be increased.
- More infrastructure should be provided for the effective use of ICTs.
- ICT professional competence in the departments should be increased.
- There must be a clear focus and objectives regarding the use of ICTs.
- Adequate and well-structured planning should be done.
- ICT awareness should be created in the sector.

The most popular recommendations include the need for sufficient and coherent government policies regulating the training of staff in the utilisation of ICTs in the sector. Also, resources need to be provided to ensure that all equipment, including Internet access, functions properly and that administrative functions are performed effectively. The issue of planning revealed here is very important and, as the study has shown, embarking on innovation requires adequate planning.

## **8 DISCUSSIONS**

One of the key areas of social informatics is the use of ICTs in both organisational and societal contexts. It is clear from Table 1 that the civil servants surveyed used ICTs mainly for communication – through e-mails and to disseminate departmental information. Civil servants also used ICTs mostly for spreadsheets, word processing and printing, which is common in an organisational context. Table 1 further shows that some of the ICTs available in government departments have a relative advantage over others. This is evident from the significant number of the civil servants surveyed using ICTs such as e-mails, intranet and the Internet for job execution. However, Table 2

shows that there are ICTs that have no relative advantage, such as video conferencing and data projectors. This could be attributed to a variety of reasons such as irrelevance of these tools to job execution. It is important to note that both of the latter ICTs were available in the government departments surveyed. However, both of them were used relatively little. While one understands the nature of government departments, it should be noted that these ICTs are some of the best innovations civil servants might adopt in order to improve work productivity and creativity in the sector. As Rogers's theory clearly states, some of the innovations lie dormant for decades not because they are useless, but because of the users' perceptions towards that particular innovation.

Table 3 depicts the civil servants' rating of ICTs in terms of their effectiveness with regard to work productivity and creativity in their respective departments. All the respondents (152; 100%) were of the view that ICTs such as e-mails, printers, telephones, mobile phones, intranet, Internet, computers, fax machines and laptops were very effective in work creativity and productivity. In support of these results, the Organisation for Economic Co-operation and Development (OECD) (2003) notes that ICTs remain a major positive dynamic force in work productivity and creativity in government departments. In his study, Anandarajan (2002:244) is of the view that ICTs have changed the process of governing in the world. Yong and Koon (2005:11), and Curtin, Sommer and Vis-Sommer (2003:44) have observed that power relations between governments and the governed have been transformed from being mainly vertical and hierarchical and structured along rigid and well-defined departmental boundaries, to being horizontal, networked and participatory.

A study conducted by the OECD (2003) on the issue of ICTs and productivity and creativity confirmed that ICTs can have a positive impact on firms' performance. By and large, it shows that firms that used either one or more ICT technologies had a higher level of labour productivity than firms that did not use these technologies. Respondents in this current study were asked to comment on contextual conditions that need to be adopted in order to improve the use of ICTs in government departments. The issue of an integrated ICT policy revealed here is a major one because, if the government is serious about improving work productivity and creativity in government departments, an integrated ICT policy is essential. Several studies have underscored the importance of integrated ICT policies as an empowering instrument at both micro and macro level investment (Van Audenhove 2003:130).

## 9 CONCLUSION

The aim of the study was to report on the adoption and utilisation of ICTs by civil servants in selected government departments in KwaZulu-Natal. A wide range of ICTs have been adopted to facilitate the sharing and exchange of information in the sector. Interpreted in the light of the diffusion of innovation theory (Rogers 1995:5), the findings suggest that ICTs that were perceived to have relative advantage – and that were more compatible with their existing values, past experiences and needs – were adopted faster. For example, the Internet and computers had a faster rate of diffusion among the

respondents than other ICTs, despite the high tariffs. Efforts to expand and modernise ICTs within government departments notwithstanding, their growth has been hampered by a number of constraints and challenges. Among them are inadequate funding, poor infrastructure, inadequate skills development and the lack of a comprehensive national and departmental ICT policy.

While a number of constraints could be addressed at departmental level, others may need to be addressed at national level. There is an urgent need to solve these problems in order to enhance the diffusion of ICTs in the public sector. This requires the intervention and interaction of all stakeholders in the public sector and also in the ICT sector. The impact of ICTs is already felt, particularly in the dramatic reduction in the cost and time involved in storing, processing and transmitting information, leading to a fundamental reshaping of the labour market and society as a whole. ICTs are generating changes and advancing in every area of economic, social and political activity in markets, private and public sectors and economies in the more and less developed world.

## **10 RECOMMENDATIONS FOR FURTHER RESEARCH**

The study set out to examine the use and contextualisation of ICTs through social informatics analysis amongst civil servants and within the civil service work environment in KZN. However, such an inventory does not reveal the entire extent to which ICTs have diffused into government ministries. Three areas that are recommended for further research are discussed below.

### **A. STANDARDS**

There are no clear standards or guidelines as to what sort of ICT training is and should be provided to civil servants for them to use ICTs confidently. Research in this area would be useful.

### **B. SATISFACTION LEVELS OF ORDINARY STAFF**

This study targeted only managers in the selected government departments. Future studies should focus on the perceptions, experiences and views of ordinary civil servants to complete the picture of social informatics in government departments in South Africa.

### **C. AREA OF STUDY**

Because of the diversity of the public sector in South Africa, the scope of this study was narrowed to selected government departments in KZN. Financial and time constraints also made it impossible to include all the government ministries in South Africa. Further research should focus on these logistically excluded areas, or at least ensure that they are included in any major studies.

## D. ICT POLICY

The ICT sector is a dynamic field with innovations emerging almost daily. A study is necessary to determine the state of integrated ICT policies at national level that would guide the diffusion and adoption of ICTs in government departments. To date, government has failed to introduce an integrated ICT policy that will address the shortage of ICT skills in the country. This lack of integrated ICT policy in South Africa is the reason why government departments themselves have no ICT policy that will ensure that civil servants have enough access to relevant ICTs in their respective departments.

## REFERENCES

- Agard, KA. 2010. Leadership in non-profit organizations: a reference handbook, Volume 1. London: Sage.
- Anandarajan, M. 2002. Profiling Web usage in the workplace: a behaviour based artificial intelligence approach. *Journal of Management Information System* 45(1):243–266.
- Ayoo, PO. 2001. An evaluation of the effectiveness of the Internet as a source of information to industrial researchers in Nairobi. MPhil thesis, Moi University.
- Berleur, J, Nurminen, MI & Impagliazzo, J. 2006. Social informatics: an information society for all? In remembrance of Rob Kling. Springer: New York.
- Bolc, L, Makowski, M & Wierzbicki, A. 2010. Social informatics. Paper presented at the Second International Conference, SocInfo 2010, Laxenburg, Austria, 27–29 October.
- Clarke, R. 1999. A primer in diffusion of innovations theory. <https://www.anu.edu.au/people/Roger.Clarke/SOS/InnDiff.html>.
- Comminos, A, Esselaar, S, Gillwald, A, Moyo, M & Naidoo, K. 2010. South African ICT sector performance review 2009/2010. Towards Evidence-based ICT Policy and Regulation 2(6). [http://www.researchictafrica.net/new/images/uploads/SPR20092010/SA\\_SPR-final-web\\_Master\\_13Oct.pdf](http://www.researchictafrica.net/new/images/uploads/SPR20092010/SA_SPR-final-web_Master_13Oct.pdf) (Accessed 12 December 2010).
- Curtin, GG, Sommer, MH & Vis-Sommer, V., eds. 2003. The world of e-government. New York: The Haworth Political Press.
- Evans, D & Yen, DC. 2006. E-government: evolving relationship of citizens and government, domestic, and international development. *Government Information Quarterly* 23(2):207–235.
- Kaisara, G & Pather, S. 2009. E-government in South Africa: e-service quality access and adoption factors, in Proceedings of the 11<sup>th</sup> Annual Conference on WWW Applications, Port Elizabeth, 2–4 September.
- Kitaw, Y. 2006. E-government in Africa: prospects, challenges and practices. [http://www.friends-partners.org/GLOSAS/Global\\_University](http://www.friends-partners.org/GLOSAS/Global_University) (Accessed 14 May 2008).
- Kling, R. 2000. Learning about information technologies and social change: the contribution of social informatics. *The Information Society* 16(3):217–232.
- Kling, R. 2001. Information, social context, and culture. <http://is.gseis.ucla.edu/research/dl/kling.html> (Accessed 12 July 2011).
- Kling, R, Rosenbaum, H & Sawyer, S. 2005. Understanding and communicating social informatics: a framework for studying and teaching the human contexts of information and communication technologies. New Jersey: Information Today.

- Law, N, Pelgrum, WJ & Plomp, T. 2008. Pedagogy and ICT use in schools around the world: Findings from the IEA. Hong Kong: Springer.
- Le Roux, CJB. 2009. Social and community informatics. Past, present, & future: an historic overview. Keynote address at the 10<sup>th</sup> Annual DIS Conference, Department of Information Studies, University of Zululand: Kwa-Dlangezwa, 10–11 September.
- Mbatha, BT. 2009. Web-based technologies as key catalysts in improving work productivity and creativity: the case of Zululand District Municipality. *Journal for Communication Sciences in Southern Africa* 28(2):82–95.
- Millbery, G & Stuart, S. 2010. OCR information & communication technology for A2. New York: Trans-Atlantic.
- Minishi-Majanja, M & Kiplangat, J. 2003. Women librarians in Kenya: a study of the status and occupational characteristics. *Library Management* 24(1/2):70–78.
- Mutula, SM. 2008. Comparison of sub-Saharan Africa's e-government status with developed and transitional nations. *Information Management & Computer Security* 16(3):235–250.
- Mutula, SM & Mostert, J. 2008. Impact of e-government on service delivery in South Africa, in Proceedings of the Faculty of Arts Conference, University of Zululand, September.
- Ngege, GA. 2003. Gender equity and new information and communication technologies. <http://www.sdnf.undp.org/sdnfcmr/fawecam/ngenge.htm> (Accessed 15 July 2005).
- Ngulube, P. 2007. The nature and accessibility of e-government in Sub Saharan Africa. *International Review of Information Ethics* 7:<pages>.
- Ntetha, MA. 2010. The access, interaction, use and impact of information and communication technologies among civil servants in the uMhlatuze area: a social informatics study. Dissertation, University of Zululand, Kwa-Dlangezwa.
- Organisation for Economic Co-operation and Development [OECD]. 2003. ICT and economic growth – evidence from OECD countries, industries and firms. Paris: < >.
- Plomp, TJ. (2009). Cross-national information and communication technology: policies and practices in education. 2<sup>nd</sup> ed. New York: IAP-Information Age.
- Powell, M. 2003. Oxfam information management for development organizations – development guidelines. 2<sup>nd</sup> ed. Oxfam: London.
- Rogers, EM. 1995. Diffusion of innovations. 4<sup>th</sup> ed. New York: Free Press.
- Royal Government of Bhutan. 2006. Policy guideline on information sharing. <http://www.moic.gov.bt/pdf/infoshare.pdf> (Accessed 12 September 2009).
- Shaw, LH & Gant, LM. 2002. Users divided? Exploring the gender gap in internet use. *CyberPsychology & Behaviour* 5(6):517–527.
- Singh, R & Raja, S. 2010. Convergence in information and communication technology: strategic and regulatory considerations. Washington DC: World Bank.
- Thioune, RM. 2003. Information and communication technologies for development in Africa, Vol. 1: Opportunities and challenges for community development. Ottawa: IDRC & CODESRIA.
- UNDP. 2001. Creating a development dynamic: final report of the digital opportunity initiative. <http://www.opt-init.org/framework> (Accessed 03 May 2009).
- UNESCO. 2008. E-governance. [http://portal.unesco.org/ci/en/ev.phpURL\\_ID=3038&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.phpURL_ID=3038&URL_DO=DO_TOPIC&URL_SECTION=201.html) (Accessed 10 January 2009).

- Unwin, T. 2009. ICT4D: Information and communication technology for development. New York: Cambridge University Press.
- Van Audenhove, L. 2003. Towards an integrated information society policy in South Africa: an overview of political rhetoric and policy initiatives 1994–2000. *Communication* 29(1 & 2):129–147.
- Van Jaarsveld, D. 2008. MEC Radebe slams welfare chaos. *Zululand Observer* 30 June:1.
- Walsham, G. 2001. *Making a world of difference: IT in a global context*. Chichester: John Wiley.
- West, DM. 2005. Fifth annual global e-government study: US and four Asian nations are world's five best online governments. [http://www.brown.edu/Administration/News\\_Bureau/2005-06/05-024.html](http://www.brown.edu/Administration/News_Bureau/2005-06/05-024.html) (Accessed 14 April 2009).
- Williams, D, Wilson, K, Richardson, A, Tuson, J & Coles, L. 1998. *Teachers' ICTs skills and knowledge need: final report to Scottish Office Education and Industry Department*. The School of Information and Media, Faculty of Management, The Robert Gordon University, Scotland. <http://www.scotland.gov.uk/library/ict/append-title.htm> (Accessed 14 February 2010).
- World Bank. 2008. Definition of e-government. <http://web.worldbank.org/wbsite/external/topics/extinformationandcommunicationandtechnologies/extegovernment/> (Accessed 24 July 2009).
- Yong, JSL & Koon, H. (ed). 2005. *E-government in Asia: enabling public service innovation in the 21<sup>st</sup> century*. Singapore: Times Editions-Marshall Cavendish.
- Yull, S, Jarvis, A & Lawson, J. 2005. *Edexcel AS GCE applied ICT single award*. Heinemann: Oxford.



# JOB FUNCTIONS AND REQUIREMENTS FOR KNOWLEDGE MANAGERS: LESSONS FOR LIBRARY AND INFORMATION SCIENCE (LIS) SCHOOLS IN SOUTH AFRICA

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## **ABSTRACT**

The study explored the job functions and requirements for knowledge management practitioners through the analysis of job advertisements appearing on 12 major jobsites in South Africa. It aimed to provide vital information that can assist in re-examining knowledge management education in library and information science (LIS) schools in South Africa. A total of 32 knowledge management-related job advertisements were retrieved using “knowledge” and “knowledge management” as search terms. Details regarding date and location of advertisement, job requirements (i.e. qualification, skills, knowledge, experience and attitude) and, most importantly for the purpose of this study, the job functions (i.e. responsibilities, duties, description) were captured from the advertisements and analysed. The majority of the jobs were based in Gauteng with a few based in KwaZulu-Natal and Limpopo. The findings revealed that a variety of job titles are used to refer to knowledge management practitioners with “knowledge manager” appearing in a majority of the advertisements. Taking into account the multidisciplinary nature of knowledge management, there was diversity in terms of the qualifications required. Some of the common job functions or responsibilities listed in the advertisements were designing and executing a knowledge management strategy, identifying knowledge and information needs, conducting research, conducting knowledge audits, and developing, implementing and maintaining knowledge repositories/databases. The study recommends that LIS schools should endeavor to align their offerings to market requirements so that their graduates may have the required academic qualifications, knowledge, skills and attitudes. Areas of further research are recommended.

## KEYWORDS

Content analysis, information professionals, <informatics>, knowledge management, knowledge workers, South Africa

## 1 INTRODUCTION

In order for library and information science (LIS) professionals to engage more successfully in the knowledge management (KM) arena and to maximise their prospects for success in what is a very competitive field, an insight into the job functions and requirements in demand is critical. Gaining insight into these job requirements and functions is made more important by the diverse approaches in KM and the multidisciplinary nature of the concept. In view of this, this article aims to establish the job functions and requirements for KM practitioners through the analysis of job advertisements appearing on 12 major jobsites in South Africa.

The growth and prevalence of KM is largely attributed to the evolution of a knowledge society (Hannula, Kukko & Okkonen 2003; Hazeri & Martin 2006; Kumar 2010:24; Sinotte 2004:191) in which organisational assets are intangible and tied up in the knowledge, skills, and capacity for innovation of its employees (Hazeri & Martin 2006). In addition, competitive advantage is based on the creation of knowledge and its effective management and use. Knowledge is also valued highly because it is closer to action (McInerney 2002). Although not widely discussed, one additional factor that bears mentioning is the current aging demographic of employees (Hazeri & Martin 2006). The authors argue that organisations are realising that a large proportion of their most important age group – with a vast amount of knowledge – is on the verge of retirement. Therefore, there is a growing awareness that if measures are not taken, this vast quantity of vital knowledge and expertise could be lost. Moreover, the impetus for the emergence of a knowledge focus in organisations, and its subsequent development through knowledge management theory and practice, emerged out of the realisation that knowledge is a strategic asset of capital value in organisations, individuals, corporations and nations (Choo & Bontis 2002; Davenport & Prusak 1998). The increasing complexity of the environment in which organisations operate, combined with the demands of customers and the pressure for innovation and competition, makes knowledge central to businesses' success today. Knowledge is now seen as a factor of production not only on par with land, labour and capital, but surpassing them in importance. As a result, both knowledge and its management have become fundamental strategic resources of organisations (Dulipovici & Baskerville 2007).

KM has attracted enormous attention from a number of disciplines over the years, including LIS. Understandably, various disciplines have influenced and informed KM thinking. For example, philosophy in defining knowledge; cognitive science in understanding knowledge workers; social science in understanding motivation, people, interactions, culture, and the environment; management science in optimising operations and integrating them within

the enterprise; information science in building knowledge-related capabilities; knowledge engineering in eliciting and codifying knowledge; artificial intelligence in automating routine and knowledge-intensive work; and economics in determining priorities (Kakabde, Kakabadse & Kouzmin 2003). This multidisciplinary nature of KM has drawn inputs from people in different fields including economists, human resource professionals, information technology professionals, and LIS professionals (Sarrafzadeh 2005:93). Sadly, it is this multidisciplinary nature of KM that has also brought about competing ownership claims of supremacy over the subject among the disciplines involved. This factor (i.e. the multidisciplinary nature of KM) also accounts for the broad range of viewpoints and approaches in the field of KM (Sinotte 2004:191) which, we believe, is also reflected – or manifests itself – in the job market.

## 2 DEFINING KNOWLEDGE MANAGEMENT

The growth of KM, both as a research theme and an organisational strategy, has gained significant traction throughout the past decade (Chua 2009). However, despite this growth, there is no consensus among KM scholars and practitioners on what constitutes the concept. As such, there is no universally agreed upon definition of KM (Onyancha & Ocholla 2008:1). Given this lack of conceptual consensus, KM is termed “nonsense” in some quarters (Wilson 2002). Noticeably, defining the scope of KM remains one of the unresolved issues in the KM discourse. This is evident from the variety of definitions that have been put forward to describe the term. Table 1 gives a list of some definitions selected from extant literature.

**Table 1: Selected definitions of KM**

Definition of knowledge management	Author (s)
Knowledge management in its broadest sense is a conceptual framework that encompasses all activities and perspectives required to gain an overview of, deal with, and benefit from the corporation’s knowledge assets and their conditions.	Wiig (1993)
Knowledge management addresses the generation, representation, storage, transfer, transformation, application, embedding, and protecting of organisational knowledge.	Hedlund (1994)
Knowledge management is mainly concerned with the development and exploitation of the knowledge assets of an organisation, with a view to furthering the organisation’s objectives.	Davenport & Prusak (1998)
Knowledge management is the identification, optimisation and active management of intellectual assets, either in the form of explicit knowledge held in artefacts or tacit knowledge possessed by individuals and communities.	Snowden (1998)

Knowledge management is the identification, acquisition, utilisation, support, maintenance and disposal of knowledge assets for the purpose of adding value and benefiting all stakeholders.	Rowley (1999)
Knowledge management involves the identification, organisation, dissemination and use of this knowledge to generate value in the achievement of the organisation's objectives.	Luen & Al-Hawamdeh (2001)
Knowledge management is a strategy that transforms organisational intellectual goods into higher productivity, new values and competitiveness increase.	Murray (2001)

As can be seen in Table 1, although there are numerous subtly different definitions of KM, they all share three common features. Firstly, KM is an organisational strategy to enhance competitiveness; secondly, it is a systemic process of leveraging the organisation's intellectual assets; and thirdly, KM involves the process of identifying, capturing, sharing and creating organisational knowledge.

### 3 RELEVANCE OF KM IN LIS

We believe that KM is still a rapidly developing area within which LIS professionals have a critical role to play. Since its emergence and conception in the 1990s (Jacobs 2004; Ondari-Okemwa & Minishi-Majanja 2007; Ponzi 2002), KM has received significant attention from LIS. It is now a major feature in LIS discourse and a major theme in various LIS conferences. For instance, in South Africa, the major conferences that immediately come to mind are those that are hosted annually or biennially by organisations such as the Library and Information Association of South Africa (LIASA), Progress in Library and Information Science in Southern Africa (ProLISSA), the University of Johannesburg (Department of Information and Knowledge Management), the University of Stellenbosch [International Symposium on the Management of Industrial and Corporate Knowledge] (ISMICK), the University of Zululand (Department of Information Studies Annual Conference), and the University of South Africa (Annual Research Symposium). As if they have heeded calls from several authors such as Koenig (2005), Martin, Hazeri and Sarrafzadeh (2006), and Srikantaiah and Koenig (2000) for LIS professionals to take full advantage of the emerging opportunities in knowledge management, LIS schools have incorporated KM into their curricula, and some have even amended their names to reflect this change. For example, the Department of Information and Knowledge Management at the University of Johannesburg changed its name from the Department of Information Science.

A number of authors in the LIS field have commented about the relevance of KM for LIS professionals. Some of them, such as Ganguly (2007), have gone as far as vehemently claiming that the management of information and knowledge has long been regarded as the domain of LIS professionals as librarians and information professionals are formally trained in identifying, selecting, organising and disseminating information and knowledge to users.

Onyancha and Ocholla (2009), citing LIS professionals and writers, observe that KM is an extension of what LIS workers have always done, namely managing information (including records management). Chen, Snyman and Sewdass (2005:2) observe that “in many cases, KM is being used simply as a synonym for information management”. The authors further observe that “some organisations have been under the impression that they were implementing KM, whereas they were actually implementing document management or information management” (Chen, Snyman & Sewdass 2005:2). It has also been observed that, although there are some differences between information management and knowledge management, the two concepts are similar in some ways (Al-Hawamdeh 2003; Chen, Snyman & Sewdass 2005:2; Read-Smith, Ginn, Kallaus, Fosegan, Logan & Schreiber 2002). Together with document management, information management and knowledge management are “similar in that the three approaches contribute to business efficiency and effectiveness; consider the processing of information in some ways; use information technologies as enablers; and require skilled and knowledgeable workers” (Chen, Snyman & Sewdass (2005:14).

We, however, believe that knowledge management goes beyond identifying, selecting, organising and disseminating knowledge. It is mainly concerned with the development and exploitation of the knowledge assets of an organisation, with a view to furthering the organisation’s objectives (Davenport & Prusak 1998). This fact points to a number of potential deficits in the skills of LIS professionals that would inhibit the maximisation of the contribution that they could make in knowledge management initiatives. These are highlighted by St Clair (2001) and DiMattia and Oder (1997) and include lack of organisational political understanding, unwillingness to address issues of return on investment, insufficient understanding of business practices, and limited access to high-level decision-making. This article, although not an advocacy for LIS professionals’ involvement in KM, aims to bring to the attention of LIS professionals the skills and knowledge required for knowledge management jobs.

## **4 METHODOLOGY**

The study adopted a content analysis approach to scan through KM job advertisements appearing in twelve major Internet-based jobsites in South Africa (see Table 1). Welman, Kruger and Mitchell (2009:221) define content analysis simply as a “quantitative analysis of qualitative data” whereby “the basic technique involves counting the frequencies and sequencing of particular words, phrases or concepts in order to identify keywords or themes”. Palmquist in Onyancha and Ocholla (2009b:93) opines that content analysis is used to “determine the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts and to quantify this presence in an objective manner” where texts are defined as “books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theatre, informal conversation, or effectively any occurrence of communicative language”.

These websites were chosen on the premise that they are widely used in South Africa by various organisations and agencies to advertise job vacancies in the country. The terms “knowledge” and “knowledge management” were used as search terms to retrieve relevant records. The term “knowledge” was used mainly because it broadened the scope of the search to include other job titles that included the word knowledge. The authors acknowledge that the term “knowledge management” was limiting in some instances, especially if the website allowed searching within the job titles only. However, the authors observed that the search using the two terms resulted in the retrieval of advertisements that not only contained the search terms within the titles but also within the body of the advertisement. Each of the terms was used separately to retrieve knowledge management job vacancies from the aforementioned jobsites.

**Table 2: Data sources**

Website	Number of adverts
<a href="http://www.careerjet.co.za">http://www.careerjet.co.za</a>	15
<a href="http://www.indeed.co.za">http://www.indeed.co.za</a>	9
<a href="http://www.wowjobs.co.za">http://www.wowjobs.co.za</a>	0
<a href="http://www.bestjobs.co.za">http://www.bestjobs.co.za</a>	1
<a href="http://www.jobmail.co.za">http://www.jobmail.co.za</a>	1
<a href="http://www.careerjunction.co.za">http://www.careerjunction.co.za</a>	3
<a href="http://www.pnet.co.za">http://www.pnet.co.za</a>	2
<a href="http://www.careerweb.co.za">http://www.careerweb.co.za</a>	0
<a href="http://www.jobportal.co.za">http://www.jobportal.co.za</a>	0
<a href="http://www.jobcrystal.co.za">http://www.jobcrystal.co.za</a>	0
<a href="http://www.recruitmentdirect.co.za">http://www.recruitmentdirect.co.za</a>	0
<a href="http://www.careers24.co.za">http://www.careers24.co.za</a>	1
Total	32

The relevant advertisements were retrieved and captured onto a spreadsheet constructed using Microsoft Excel. A total of 48 job vacancies were retrieved from the 12 jobsites and, upon cleaning the data of duplicates and irrelevant records, a total of 32 job vacancies were obtained for analysis. The list of those websites and the number of advertisements retrieved from each can be seen in Table 2 above. Data cleaning was considered desirable as some job advertisements appeared on multiple jobsites. Advertisements with similar job titles, job descriptions, qualifications and work experiences were identified and carefully examined to remove duplication. Job advertisements with very brief job descriptions were removed as it was difficult to determine their suitability for analysis. The 32 advertisements were analysed for details regarding location of the advertised job and job specifications and requirements in terms of qualifications, experience, knowledge, skills and attitudes. A similar method (analysing job advertisements) was also preferred by Morris (2001) when assessing the opportunities for LIS students in the KM job market. Although her study

focused on analysing job advertisements appearing in newspapers, similar to this study, the advertisements were analysed in terms of job functions and requirements. Newspaper scanning has also been conducted elsewhere by Snyman (2000) and Ocholla (2001) with significant success for determining national LIS education and training needs and the job market requirements. Mining of key terms from the text was conducted using the TextStat software which generated the frequencies of occurrence of specific terms within the text. In view of the fact that “specific concepts or variables in qualitative texts cannot necessarily be studied in a quantitative way only because these concepts or variables may have quite different meanings when relationships between the concepts are taken into account” (Welman, Kruger & Mitchell 2009:221), it was necessary to conduct further analyses to check for relationships between terms used to describe the functions and responsibilities of knowledge workers. In that respect, a core/periphery model and social network analysis techniques were used to find the most common keywords that are used to describe KM job requirements (see Figures 1 and 2).

## **5 RESULTS**

The results are presented under the following headings: general information, job details (e.g. title, description etc) and job requirements (e.g. academic qualification, experience, skills, knowledge, attitude, etc).

### **5.1 GENERAL INFORMATION**

A total of 32 job advertisements were analysed according to the website in which the advertisement appeared. It was observed that most job advertisements appeared in *careerjet.co.za* followed by *indeed.co.za* (9), *careerjunction.co.za* (3) and *pnet.co.za* which yielded a total of 2 job advertisements. In terms of location, most jobs (20) were based in the Gauteng province, followed by KwaZulu Natal (8) and Limpopo (4). There were no knowledge management related jobs based in other provinces. The pattern of distribution of job advertisements according to provinces can be attributed to the fact that Gauteng is the economic hub of South Africa. Besides the province comprising two major cities (i.e. Johannesburg and Pretoria), it is also home to the capital city of South Africa.

### **5.2 JOB DETAILS**

The job details contain job title and description. These are discussed below.

#### **5.2.1 Job title**

Generally, a job title indicates what the job entails. When reading a job title, one is able to discern what the job involves. Although misleading at times, job titles are important indicators of what the job entails. Out of the 32 KM jobs analysed, the title ‘knowledge manager’ appeared in nine (28.1%) advertisements, followed by ‘knowledge management professional’ which appeared in a total of five (8%) records.

**Table 3: Job titles (N=32)**

Job Title	Frequency	Percentage
Knowledge manager	9	28.1
Knowledge Management Professional	5	15.6
Knowledge Management Manager	3	9.4
Knowledge and Information Architect	3	9.4
Assistant Director: Knowledge Management	2	6.3
Consumer and Market Knowledge Specialist	2	6.3
Executive Manager: Knowledge Practices and Consulting Services	2	6.3
Knowledge Management Specialist	2	6.3
IT and Knowledge Manager	1	3.1
Knowledge Assistant	1	3.1
Knowledge Management Consultant	1	3.1
Knowledge Practitioner	1	3.1
Total	32	100.0

The distribution pattern of the records according to job titles for the rest of the advertisements was as follows: ‘knowledge management manager’ (3, 9.4%), ‘knowledge and information architect’ (3, 9.4%), ‘assistant director: knowledge management’, ‘consumer and market knowledge specialist’, ‘executive manager: knowledge practices and consulting services’ and ‘knowledge management specialist’, which yielded 2 (6.3%) records each.

### 5.2.2 Job description

Job description is essential for determining training and education needs (Ocholla 2005:6). Generally, job description outlines the activities/duties/responsibilities attached to a job. If the aim is to train employable graduates, then these are critical for identifying key areas to be addressed in the curriculum. Job descriptions for each job were generally descriptive and numerous. As a result, including all of them would take a lot of space. However, the effort was made to group them according to related themes appearing across job descriptions in all advertisements. The general themes visible in most advertisements included designing and implementing a knowledge management strategy, identifying knowledge and information needs, conducting research, knowledge audits, developing, implementing and maintaining knowledge repositories/databases, promoting knowledge sharing, building strong networks, designing and implementing a knowledge management policy, etc. Other common descriptions included the following:

- Capture, organise, manage, share and leverage the collective intellectual capital.
- Analysing competitor activities.
- Audit and analysis of current KM system.





Figure 2 was derived from Figure 1 in order to show the pattern of linkages and clusters of keywords that belong to different clusters. A few examples of the clusters have been labeled (in no particular order of preference) in the Figure for identification purposes. For example, cluster A consists of terms such as *able, think, strategically, commercially, and account* while the distribution pattern of other terms were as follows: cluster B (*establishment, nurturing, troubleshooting, and workshops*); cluster C (*delivery, engagement, forecast, plan, profitability and revenue*; cluster D (*dissemination, process, design, access, data, consultation, and KM*); and cluster E (*consumers, repositories, banking, activities, local, markets, and documents*); and cluster F (*teams, seamless, external, internal, tools, monitor, processes, work, exchanges, and facilities*).

A normalised count analysis, which is commonly used to reflect the strengths of association in a pair of terms, revealed that the strongest co-occurrence of terms was registered between *ability* and *service* (0.667) followed by *ability* and *standard* (0.577); *promote* and *sharing* (0.572); *sharing* and *organisation* (0.572); *ability* and *products* (0.535); *ability* and *manage* (0.523); *ability* and *projects* (0.504); *sharing* and *collaborative* (0.492); and *ability* and *nationally* (0.471).

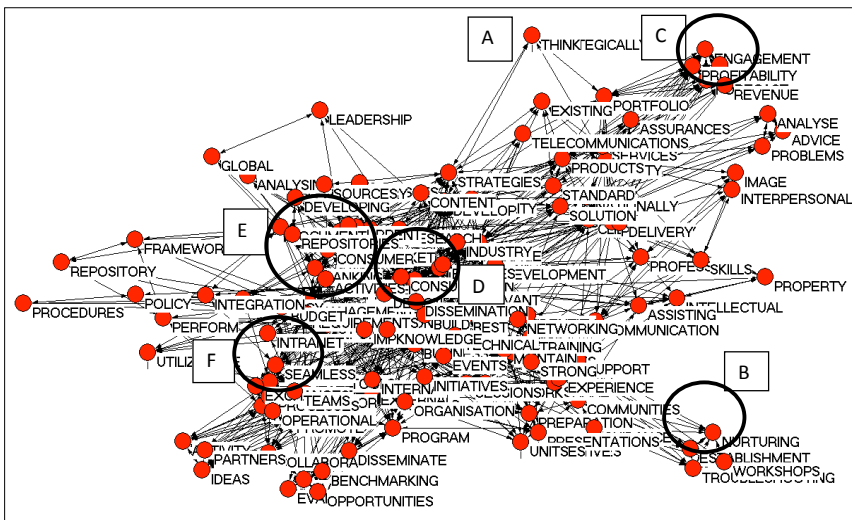


Figure 2: Social network and cluster analysis of job description terms

### 5.3 JOB REQUIREMENTS

Job requirements comprise academic qualifications, knowledge base, skills, attitude, and experience of the candidates as presented below:

#### 5.3.1 Academic qualifications

In terms of academic qualifications, most jobs (25) required a bachelor’s degree while two advertisements required an Honours and a Master’s degree respectively. Five of

the job advertisements did not spell out the qualifications required. Table 4 reveals that there was diversity in terms of areas of study (disciplines). The majority of the jobs preferred Business Science (8), followed by Knowledge Management (5), Social Science (4) and Information Science (3). A surprise inclusion was an LLB qualification which may imply that KM cuts across disciplines to include legal studies as well.

**Table 5: Areas of study (N = 32)**

Discipline	Frequency	Percentage
Statistics	2	6.3
Psychology	2	6.3
Marketing	2	6.3
Commerce/Business Science	8	25.0
Social Science	5	15.6
Information Science	3	9.4
Knowledge Management	6	18.8
Information Technology/Computer Science	3	9.4
LLB	1	3.1
TOTAL	32	100.0

### 5.3.2 Required knowledge

This aspect was not visible in most advertisements, perhaps on the premise that the job description, qualification and skills required would indicate the knowledge required as well. In the few advertisements that included this aspect, grounded knowledge of the subject domain of information and knowledge management was the main requirement. This observation is in contrast with the subject of the qualifications expressed above under ‘academic qualification’. Whereas it was revealed that the academic qualification in terms of subjects of study was multidisciplinary, the same cannot be said of the required knowledge. This scenario can be attributed to the fact that the said knowledge has been expressed in the subject areas of academic qualifications.

### 5.3.3 Skills

Most advertisements did not include information about the required skills. In the few that did, strong communication (both oral and written) was the most preferred skill. Also featuring strongly were presentation skills, computer skills, problem-solving skills and teamwork and interpersonal skills. Others included entrepreneurial, organisational and document management, project management, administrative and management, and policy and diplomacy skills.

### 5.3.4 Attitudes

Attitude involves the candidate’s personal attributes that are required for a job. As was the case with the required skills, the attitudes required for KM jobs were not included

in some of the advertisements. Among those that included this aspect, the dominant attributes included emotional resilience, analytical thinking with attention to detail, ability to work under pressure, results driven, honesty and integrity, ability to work in a team and willingness to learn and adapt. Others included:

- Decisive judgement
- Drive for results
- Logical reasoning
- Persuasive negotiator
- Proven ability to work independently
- Courage
- Energy and drive
- Analytical thinking
- Proactive
- Self driven, motivated individual
- Client focused attitude
- Quality oriented

### 5.3.5 Experience

Previous working experience in terms of years and specific areas was relevant and required in most jobs. This varied across job advertisements, with the majority requiring a minimum of two years and a maximum of ten. With regards to areas of experience, a requirement for previous experience in a knowledge management capacity was prevalent in all advertisements. These included previous experience in establishing effective partnerships within and outside the organisation, developing and delivering knowledge sharing programs and, with the information infrastructure, learning and knowledge sharing experience.

## 6 DISCUSSION OF RESULTS

The results based on the data obtained from advertisements, that is 32 job vacancies appearing on 12 major jobsites in South Africa analysed for this study, provide a glimpse of the job requirements (e.g. qualifications, skills, knowledge, attitude, experience, etc) and details (e.g. titles and description) of knowledge management practitioners, at least as far as the industry is concerned.

We believe that job titles are very important as they define a job, that is, what the job entails. The results of the study show that there is diversity in terms of the job titles used for knowledge management vacancies. This indicates that the roles in the knowledge management sector are wide ranging with many different job titles used to describe them. Noticeably, all 32 job titles contained the word “knowledge” – for example, “*Knowledge and Information Architect*”, “*Knowledge Management Consultant*,” “*Knowledge Management Specialist*” and so on. The majority (9 or 28%) of advertisements contained “*Knowledge Manager*” as a job title. This pattern was not surprising because we used search terms that contained

the term *knowledge* to search for job advertisements related to knowledge management. An examination of some of the websites of departments offering KM as a qualification in South Africa (e.g. the Department of Information and Knowledge Management at the University of Johannesburg (UJ) in South Africa) reveals that job titles related to knowledge management are becoming refined and therefore universal. For instance, this department at UJ outlines the possible careers of their graduates as follows: information manager, records manager, business intelligence analyst, information consultant, knowledge manager, and information broker (University of Johannesburg Department of Information and Knowledge Management, 2010). It was noted that these titles resonated well with the global trend of assigning certain titles to knowledge practitioners.

Given the fact that the study endeavored to utilise its results to inform and advise knowledge management education and training in the field of LIS in South Africa, the job descriptions were viewed as important because they are essential in determining training needs. Generally, job descriptions are narratives with the aim of fully outlining the activities/duties/responsibilities attached to a job. From the advertisements analysed, most job descriptions centered around designing and implementing a knowledge management strategy; identifying knowledge and information needs; conducting research; conducting knowledge audits; developing, implementing and maintaining knowledge repositories/databases; promoting knowledge sharing; building strong networks; and designing and implementing a knowledge management policy. We can safely conclude that knowledge management jobs in every organisation are unique as reflected in the aforementioned knowledge management roles (Abell & Oxbrow 1999). It should be noted, however, that these roles have a variety of job titles with varying definitions.

In terms of job requirements, most jobs (25) required a bachelor's degree, with only two requiring an Honours (1) and a Master's degree (1). It was noted that none of the job advertisements required a PhD qualification, perhaps because (1) KM is a relatively new concept and function and the industry may thus have been requiring a qualification rare in the field had it insisted on PhD qualification and/or (2) the PhD qualification might be looked at as being too high a requirement for the job of a knowledge manager. However, just like in any other growing sub-field or field, KM may soon require employees with PhD qualifications. There was variety in terms of areas of study with the majority of the jobs requiring a qualification in Business Science (8), followed by Knowledge Management (5), Social Science (4) and Information Science (3). We believe that the multidisciplinary nature of knowledge management accounts for the diversity in terms of the areas of study preferred for knowledge management vacancies. Furthermore, this diversity may be attributed to the fact that knowledge management is still an emerging discipline and, as such, there is no standard and widely accepted competency framework for KM professionals available (Luthra 2008). Notably, only three advertisements required a qualification in Information Science. Could it be that organisations view the LIS profession to have had little impact on knowledge management in organisations, as concluded by Abell and Oxbrow (1999)? Further, the authors mention that some organisations see a limited involvement for LIS professionals, despite the development of imaginative and relevant courses in LIS academic departments, because of their perception of a profession that seldom engages with the business. Even

though there may be substance to these claims, we believe that, generally, the qualifications required are a reflection of the advertiser's perception of knowledge management and not necessarily that information professionals have a limited role in knowledge management. The involvement of LIS scholars in KM is also reflected in a study conducted by Onyancha in 2011. Onyancha (2011) found that a majority of the study leaders of master's and PhD projects conducted in South Africa are LIS scholars or researchers, a situation that may lead us to conclude that the field of LIS has a lot to offer in the development of KM.

A number of skills were required for knowledge management vacancies. Strong communication (both oral and written), presentation skills and computer skills were emphasised in most advertisements. The other skills required included problem solving skills, teamwork and interpersonal skills, entrepreneurial skills, and project management skills. These are in line with the skills identified by research on this subject, funded by the Library and Information Commission and conducted by Abell and Oxbrow (1999). Outlining the main conclusions of the project, Abell and Oxbrow (1999) state that communication is at the heart of the knowledge management environment as verbal, written, and presentation skills, are required in order to influence, persuade, negotiate and share knowledge. Most jobs required a positive attitude with emphasis on emotional resilience, analytical thinking with attention to detail, ability to work under pressure, results driven, honesty and integrity, ability to work in a team as well willingness to learn and adapt. In terms of experience, two to ten years' experience was emphasised in all advertisements. This shows the longevity of knowledge management practices in any given organisation. In addition, most jobs required previous working experience in knowledge management.

## 7 CONCLUSION AND RECOMMENDATIONS

This study concludes thus:

- Knowledge management job requirements vary from one institution and sector to another, probably due to the multidisciplinary nature of KM.
- There are a variety of job requirements for knowledge managers in terms of academic qualifications, required knowledge, skills, attitudes and experience.
- The majority of KM jobs require people with the ability to develop and manage projects as well as inject new ideas, all for the purpose of ensuring high quality services and products. This was reflected mainly through the core/periphery analysis of the data as presented in Figure 1.
- Among the processes of knowledge management most emphasised in the job advertisements was knowledge sharing, thereby according the process prominence in the advertising organisations.
- The areas of study required of knowledge managers cut across many disciplines, including statistics, psychology, marketing, commerce/business science, social science, information science, knowledge management, information technology and/or computer science and law.

In conclusion, we believe that, although the data collected may not be representative of the job requirements for knowledge managers given that there were only 32 job

advertisements, the requirements may shape the LIS curriculum and offerings as far as knowledge management is concerned. LIS schools should endeavor to align their offerings to the market requirements so that their graduates may have the required academic qualifications, knowledge, skills and attitudes. Another area that may be of help to students to adapt well to the working environment is experiential training. LIS schools may want to include this aspect in their education and training programmes.

Further research is required to expand the study beyond the online jobsites to include such sources of data as newspapers and other advertising media agencies. Given that the search was limited to the keywords 'knowledge' and 'knowledge manager', it is recommended that further research that will broaden the search to include other search terms be conducted in order to gain more insight into the types of jobs that exist in KM, as well as their requirements.

## REFERENCES

- Abell, A & Oxbrow N. 1999. Skills for the knowledge economy: the reality of the market-place. *Business Information Review* 16(3):115–121.
- Al-Hawamdeh, S. 2003. *Knowledge management: cultivating knowledge professionals*. Oxford: Chandos Publishing.
- Chen, XH, Snyman, MMM, & Sewdass, N. 2005. Interrelationship between document management, information management and knowledge management. *South African Journal of Information Management* 7(3):1–19.
- Choo, CW & Bontis, N. 2002. *The strategic management of intellectual capital and organizational knowledge*. New York: Oxford University Press.
- Chua, AYK. 2009. The dark side of successful knowledge management initiatives. *Journal of Knowledge management* 13(4):32–40.
- Davenport, T & Prusak, L. 1998. *Working knowledge: how organizations manage what they know*. Boston, MA: Harvard Business School Press.
- DiMattia, S & Norman, O. 1997. Knowledge management: hope, hype or harbinger? *Library Journal* (Sept. 15):33–35.
- Dulipovici, A & Baskerville, R. 2007. Conflicts between privacy and property: The discourse in personal and organizational knowledge. *Journal of Strategic Information Systems* 16:187–213.
- Ganguly, S. 2007. Changing paradigm for information professionals in knowledge management age. *DESIDOC Bulletin of Information Technology* 27(4):16.
- Hannula, M, Kukko, M & Okkonen, J. 2003. *The fourth perspective: knowledge management in human resources*. <http://www.tut.fi/units/tuta/teta/mittaritiimi/julkaisut/4thperspective.pdf> (Accessed 21 May 2011).
- Hazeri, A & Martin, B. 2006. The implications of knowledge management for library and information science education. *actKM Online Journal of Knowledge Management* 3(1):1–12.
- Hedlund, G. 1994. A model of knowledge management and the N-form corporation. *Strategic Management Journal* 15(Summer Special Issue):73–90.
- Kakabadse, A, Kakabadse, N & Kouzmin, A. 2003. Reviewing the knowledge management literature: towards a taxonomy. *Journal of Knowledge Management* 7(4):75–91.

- Kumar, AJ. 2010. Knowledge management and new generation of libraries information services: A concepts. *International Journal of Library and Information Science* 1(2):24–30.
- Luen, TW & Al-Hawamdeh, S. 2001. Knowledge management in the public sector: principles and practices in police work. *Journal of Information Science* 27(5):311–318.
- Luthra, P. 2008. Understanding the process of building KM competencies. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1126118](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1126118) (Accessed 23 May 2011).
- Martin, B, Hazeri, S & Sarrafzadeh, M. 2006. Knowledge management education for LIS professionals: some recent perspectives. *Journal of Education for Library and Information Science* 47(3):218–237.
- Murray, F. 2001. *Following distinctive paths of knowledge: strategies for organizational knowledge building in science-based firms*. London: Sage Publications.
- Ondari-Okemwa, E & Minishi-Majanja, MK. 2007. Knowledge management education in the departments of library/information science in South Africa. *South African Journal of Libraries and Information Science* 73(2):136–146.
- Onyancha, OB. 2011. Post-graduate research in information and knowledge management at institutions of higher learning in South Africa. A paper presented at the 10 Annual Information and Knowledge Management Conference, Sandton, South Africa, 22–23 June 2011.
- Onyancha, OB & Ocholla, DN. 2009a. Conceptualizing ‘knowledge management’ in the context of library and information science using the core/periphery model. *South African Journal of Information Management* 11(4):1–15. <http://www.sajim.co.za/index.php/SAJIM/article/view/412/402> (Accessed < >).
- Onyancha, OB & Ocholla, DN. 2009b. Subject content analysis of the HIV/AIDS research in eastern and southern Africa, 1981-2005. *Mousaion* 28(2):89–109.
- Oxford advanced learner's dictionary*. 2011. S.v. ‘Ability’. [http://www.oxfordadvancedlearners-dictionary.com/dictionary/ability\\_1](http://www.oxfordadvancedlearners-dictionary.com/dictionary/ability_1) (Accessed 23 May 2011).
- Read-Smith, J, Ginn, ML, Kallaus, NF, Fosegan JE, Logan, JP & Schneiter, K. 2002. *Records management*. Mason, OH: South-Western.
- Sarrafzadeh, M. 2005. The implications of knowledge management for the library and Information professions. *actKM Online Journal of Knowledge Management* 2(1):92–102.
- Sinotte, M. 2004. Exploration of the field of knowledge management for the library and information professional. *Libri* 54:190–198.
- Snowden, D. 1998. Thresholds of acceptable uncertainty. *Knowledge Management* 1(5):1–9.
- Srikantaiah, TK & Koenig, ME. 2000. *Knowledge management for the information professional*. New Jersey: American Society of Information Science.
- St Clair, G. 2002. Knowledge services: your company’s key to performance excellence. *Information Outlook* 6(6):26–33.
- University of Johannesburg Department of Information and Knowledge Management. 2010. About us. <http://www.uj.ac.za/EN/Faculties/management/departments/infoman/about/Pages/default.aspx> (Accessed 4 April 2010).
- Welman, C, Kruger, F & Mitchell, B. 2009. *Research methodology*. Oxford: Oxford University Press.
- Wiig, KM. 1993. *Knowledge management foundations: thinking about thinking – how people and organizations create, represent, and use knowledge*. Arlington: TX Schema Press.
- Wilson, TD. 2002. The nonsense of “knowledge management”. *Information Research* 8(1). <http://informationr.net/ir/8-1/paper144.html> (Accessed 30 April 2011).



# A TRACER STUDY OF LIS GRADUATES AT THE UNIVERSITY OF ZULULAND, 2000–2009<sup>1</sup>

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## **ABSTRACT**

The study traced Library and Information Science (LIS) graduates who graduated from the Department of Library and Information Science (now Information Studies) at the University of Zululand between the years 2000 and 2009. The study aimed to establish whether the graduates are employable, whether the curriculum is relevant to the LIS job market, and to investigate the perceptions of graduates about the LIS curriculum. A survey method was used to access the large and scattered LIS graduate population. A questionnaire consisting of both structured and unstructured questions was used as the main research instrument. A total of 50 graduates participated in the study. The results indicate that most LIS graduates are employed in the public sector, mainly in national, provincial and municipal libraries. Their daily tasks include, among others, cataloguing and classification, collection development, and abstracting and indexing. The results also revealed that cataloguing and classification and experiential learning remain as critical knowledge and skills required in LIS-related jobs. The study concludes that LIS graduates are generally happy with the knowledge and skills they acquired from the department, but they are not happy with the overall curriculum offered. The study recommends that the department should embark on a curriculum review process that will include an internship programme and the balancing of traditional LIS modules with technology related modules to cater for Information Science students.

## **KEYWORDS**

Follow-up study, Library and Information Science (LIS), tracer study, University of Zululand, University of Zululand alumni

# 1 INTRODUCTION

A tracer study/follow-up study is a graduate or alumni survey that attempts to trace the activities of the graduates or previous students of an educational institution (Millington nd). The Association of African Universities, or AAU (2002), and Boaduo, Mensah and Babitseng (2009), explain that tracer studies enable the contextualisation of graduates of a particular university through a system that is dynamic and reliable in order to determine their life path or movement. It also enables the evaluation of the results of the education and training provided by a particular institution and examines and evaluates the current and future career and employment opportunities/prospects of graduates (Boaduo, Mensah & Babitseng 2009). Graduates' job titles, years of employment, nature of employment, income levels, and biographical data can be revealed through tracer studies (Schomburg, cited in Millington nd).

Follow-up or tracer studies have enjoyed popularity in LIS training needs/assessment analyses over the past 20 years in Africa in studies by scholars such as Anadiran (1988) in Nigeria; Alemna (1991, 1999) and Kisiedu (1993) in Ghana; Rosenberg (1989, 1994) in Kenya; Ocholla (2001, 2005) and Stilwell (2004) in South Africa; Rugambwa (1998) and Mammo (2007) in Ethiopia; Aina and Moahi (1999) in Botswana; and Lutwana and Kigongo-Bukenya (2004) in Uganda. We note, though, that such studies are becoming less frequent, despite the increasing number of LIS Schools in Africa and indeed globally. Tracer studies are used by universities and/or departments largely to get feedback from graduates about what is happening in the job market for curriculum development and improvement. More specifically, tracer studies are conducted to establish where graduates are, what they do, and to find out whether universities prepared them well for the job market (Aina & Moahi 1999). Tracer studies are also used to investigate the perceptions of graduates about the curricula they were offered by their former universities (Lutwana & Kigongo-Bukenya 2004; Stilwell 2004). Tracer studies also investigate whether graduates obtained the required knowledge, skills, and attitudes for the job market (Kaijage nd; Ocholla 2005). In some cases, tracer studies have led universities to change their curricula to suit the needs of the job market (Lutwana & Kigongo-Bukenya 2004). In other cases, tracer studies caused departments to change their names completely because of changes in their programmes (Mammo 2007). This study is not conceptually different from other tracer studies.

The Department of Information Studies at the University of Zululand graduated 249 students (see Appendix A) in different programmes or with different qualifications between 2000 and 2009 (see the DIS Annual report 2009). It does not, however, keep a database or any record of its graduates' whereabouts after graduation as this is assumed to be the university's responsibility. This makes it difficult for the department to know where its graduates are, what they do, and the challenges they face, in order to make LIS education relevant, enable curriculum reviews and make alumni support possible. It also makes it difficult to create a network of its alumni that could be helpful for sharing knowledge or information about possible job opportunities for its current students. The

absence of such information denies the department valuable feedback from graduates and their employers about the value of the degrees on offer by the department, and makes it difficult to re-structure the curriculum for current students in order to allow them acquire the relevant knowledge and skills required by the job market.

The aim of this study was to trace graduates of the Department of Information Studies at the University of Zululand from 2000–2009, in order to establish where they are, what they do, and what interventions can be made to improve their professional activities and services. This article addresses the following research questions: Are Information Studies graduates employed, and how many are employed? In what sectors of the economy are they employed? Are the skills, knowledge and attitudes they acquired from their LIS education relevant in their jobs? Which LIS skills and knowledge are in demand?

## **2 A BRIEF OVERVIEW OF THE DEPARTMENT OF INFORMATION STUDIES**

The Department of Information Studies at the University of Zululand (formerly known as Library and Information Science) was founded in 1970 following the introduction of a four-year Bachelor of Library Science degree. An Honours degree in Library Science was introduced in 1973, followed by a Postgraduate Diploma in Library Science in 1978 and a Master's degree in Library Science in 1984. In the late eighties, a Postgraduate Diploma in School Library and Information Science was introduced. In June 1997, the degree of Doctor of Philosophy (Library and Information Science) was introduced and, in 2000, a Bachelor of Arts in Information Science was introduced to accommodate students interested in “hard” or ICT-intensive LIS courses. The student enrolment figures for the courses/modules offered by the department have steadily grown. In 2010, the name of the Department of Library and Information Science was changed to the Department of Information Studies (<http://www.lis.uzulu.ac.za/index.php/about-us>). The department has produced 249 (see appendix A) graduates between 2000 and 2009 (DIS Business Plan, 2010). In 2011, over 410 students were registered in the department's (<http://webreg.uzulu.ac.za:8090/itsquery/showQualEnrollment.jsp>) six qualification programmes with a majority (240) enrolled for the Postgraduate Diploma in School Librarianship that is offered to qualified school teachers interested in a school librarianship career for school library development in South Africa.

## **3 METHODOLOGY**

A survey of LIS graduates was conducted between October and December 2010 using largely the modified research instruments employed by Ocholla (2001). The aim of the survey was to trace graduates of the Department of Information Studies at the University of Zululand between the years 2000 and 2009. A survey method was used because the LIS

alumni were vast and scattered. The Department of Information Studies graduated 249 students over the period 2000 to 2009 (this is according to the graduation lists provided in the graduation programmes of the years 2000-2009). This figure includes undergraduates and post graduates. The target population for this study was all 249 graduates. Unfortunately, the department does not keep a database of graduates' contact details. The university's main database was therefore used to attempt to retrieve the contact details of all 249 graduates. However, only 125 records were retrieved with records for the rest (124) not being available in the database. Purposive sampling, based on the list of the 125 graduates, was then used. A questionnaire, consisting of both structured and unstructured questions, was posted to all 125 graduates to be self-administered. The posted questionnaire elicited a very low response rate. It was assumed that this was because some graduates might have moved from their last known addresses. It was then decided they should be traced physically (by visiting) to their places of employment/residence. This was achieved by snowball sampling. A list of graduates' phone numbers was obtained from their friends, relatives and anybody who had information about any LIS graduate. The snowball sampling enabled us to trace graduates in two countries (South Africa and Swaziland). In South Africa, graduates were located in three provinces: KwaZulu-Natal, Mpumalanga and Gauteng. Graduates were traced only in South Africa and Swaziland because each of the 125 listed had a South African or Swazi physical and postal address. The snowball sampling established that the majority were working in Gauteng, KwaZulu-Natal and Mpumalanga. Those in Swaziland were easily traced by one of the researchers who had originally been resident there. Data collection took about three months (October, November, and December) and 50 questionnaires were completed and returned. Descriptive statistics and content analysis were used to analyse the data.

## **5 RESULTS**

### **5.1 LEVEL OF STUDY AND SECTORS IN WHICH GRADUATES WORK**

Most of the respondents had studied Information Science (36 of 50) to Bachelor's level. They were followed by respondents who had studied Library and Information Sciences (14 of 50) at undergraduate level and respondents who had taken the Postgraduate Diploma in Library and Information Sciences (three of 50). A small number had studied up to Honours (five of 50) and Master's (two) levels. It is worth noting that the postgraduate figures (PDLIS, Honours, and Masters) are not separate from the total number of 50. These were respondents who had completed both undergraduate and postgraduate courses.

The public sector was identified as the main employer of LIS graduates. Thirty-one of the fifty graduates were employed in the public sector. Only three were employed in the private sector, and two by parastatals (state corporations). Only one graduate was not employed. The rest did not indicate where they worked. Table 1 summarises the results.

**Table 1: Sectors where LIS graduates work (N=50)]**

Sector	Frequency
Private	3
Public	31
Parastatal	2
NGO	0
Unemployed	1
Did not indicate	13

Those who were employed in the public sector were employed by the local (seven), provincial (13) and national government (11).

## 5.2 WORK EXPERIENCE OF GRADUATES

It was encouraging to note that most of the graduates had been employed for more than a year when the study was conducted. The majority had been employed for more than two years. Only a few (4) had been working for more than five years. Table 2, below, reflects the results.

**Table 2: Work experience of LIS graduates**

Experience (in years)	Frequency
0	1
<1	10
>1	6
>2	16
>5	4
No Response	13

## 5.3 METHODS OF JOB RECRUITMENT

Advertising (newspaper, websites) appears to be the most popular way to attract LIS talent. More than half of the LIS graduates indicated that they had seen the job positions they were currently occupying in advertisements. Others indicated that they had used their own contacts to get jobs. The remaining respondents said that they had been head-hunted by their current employers. Recruitment agencies did not seem to be popular among LIS graduates – none indicated that they had been recruited by an employment agency (see Table 3).

**Table 3: Methods of job recruitment**

Method	Frequency
Adverts	30
Own contacts	3
Headhunted	2
Employment agencies	0
Other	7
No response	8

## 5.4 JOB TITLES

LIS graduates hold different job titles. Most (20 of 50) of the respondents held the title of librarian (senior librarian, assistant librarian, information librarian, library intern, principal librarian, teacher librarian, and medical librarian). However, others held other titles, including: web developer, registry clerk, lecturer, desktop publisher, intern, records manager, research assistant, information technology specialist, graduate assistant, stack attendant, and IT administrator.

## 5.5 TASKS PERFORMED BY GRADUATES IN THEIR RESPECTIVE JOBS

Most LIS graduates therefore held different positions in libraries (mostly public libraries). Only a few worked in other fields such as core IT, teaching and records management, among others. This means that, for the majority, the daily tasks were typical library tasks such as cataloguing and classification, referencing, abstracting and indexing, information retrieval, collection development, processing library requests, book circulation, training, general library administration (supervision, budgeting, customer care, etc), and other library-related tasks. Those in desktop publishing designed adverts, tabloid newspapers, newsletters, cards, pamphlets and calendars, and liaised with the media for publication, while those in IT performed tasks such as IT administration (networking, updating anti-virus software, troubleshooting and fixing PCs), managing IT hardware, and web programming.

## 5.6 SKILLS, KNOWLEDGE, AND ATTITUDES REQUIRED FOR TASKS PERFORMED

There are certain skills that LIS graduates must have in order to be able to carry out their respective duties. The 20 (out of 500) who worked in libraries cited cataloguing and classification, information retrieval, library systems, developing library policies, referencing and indexing, marketing, and collection development skills. The two respondents performing core IT functions cited database management skills, hardware and software knowledge, and information systems skills. Others indicated that they were required to have knowledge of and skills in records management, knowledge management, information management, archival sciences and desktop publishing.

Attitude plays a vital role in every job. The LIS graduates generally agreed that, in order for them to perform well, they were expected to exhibit the following attitudes and characteristics: hard work, love for the job, teamwork, cooperation, confidence, professionalism, dedication, perseverance, a good sense of humour, meticulousness, self-discipline, intelligence, friendliness, positive attitude, flexibility, trustworthiness, innovativeness, dependability, patience, politeness, respect, and passion.

## 5.7 RELEVANCE OF SKILLS TO THE TASKS

The graduates were asked whether the skills they had obtained from the department were relevant to their jobs. The majority of the graduates (32 of 50) replied in the affirmative. They indicated that they used the skills in their everyday tasks.

One respondent had this to say: *“While we were studying we were given theory, taken for practical, wrote exams, and did library visits all that broadened my understanding of the LIS field [...] now I can apply what I have learned competitively in my job.”*

Another concurred: *“Yes I got a chance to work as a library assistant and used the opportunity to get to learn other things about the library.”*

Some of those who replied in the affirmative indicated that the skills they had acquired from the department were relevant, but that more practical work should have been done and that more IT-related modules could have been covered. Others agreed, but were more cautious; one respondent stated: *“Yes, but if we covered more on IT (PHP, MySQL ASP.NET, Photoshop, Corel Draw) I would say I shouldn’t have battled finding a job.”*

We recognise that the LIS curriculum cannot cover everything that the changing job environment requires. This comment is important in considering short courses for intervention where possible.

Those who replied in the negative (five) indicated that some skills were totally lacking. Most pinpointed the absence of cataloguing and classification in their curriculum. The initial BA (Information Science) left out cataloguing and classification for fear that students would see the programme as another librarianship qualification (when the university already offered a four-year Bachelor of Library and Information Science programme in which such content was offered).

One respondent lamented: *“We did not get the opportunity to learn cataloguing and classification, and library systems. BA (IS) focuses on technology only.”*

Another wrote: *“I think we never studied LIS that deals specifically with library careers.”* We assume that ‘library systems’ refers to Library Integrated Software programmes (e.g. INOPAC, KOHA), which are essential for working in a library. The balance of the respondents (13 of 50) either did not respond to the question or gave contradictory responses.

For example one respondent replied: *“Yes, I can say that information-related modules are relevant, but because I am working in the library and UZ did not offer me more*

*library modules, I think that's what I lack."* Another wrote: *"Yes, but there is a lot I should have studied at UZ. For some reason this was not offered ... I just have to face the truth that I know only 10% when it comes to web programming."*

These two responses are contradictory. The respondents start by agreeing that the skills they obtained from the DIS are relevant to their jobs, but then backtrack. The comments cited here and in the previous paragraph are also rather contradictory as the BA (Information Science) is 50 per cent IT orientated and 50 per cent library orientated.

Graduates were asked whether they were satisfied with the curriculum offered by the Department of Library and Information Science (now Information Studies). Half of the graduates (25) indicated that they were not happy with the curriculum. Only 15 indicated that they were happy with the curriculum. The rest gave unclear and contradictory responses. Many of those who indicated that they were not happy stated that the BA (Information Science) curriculum was misdirected – it did not focus on anything and was just a mixture of modules with no area of specialisation. One respondent noted: *"The curriculum lacked focus and specialisation. As a result it became unclear what I was being trained for."* Another respondent wrote: *"I first suffered while I was out of varsity looking for the job. Most of the responses from the employers (some in the private sector) were confused about the modules and said 'it is irrelevant to the job market and mixed up with no majors at 3<sup>rd</sup> year."*

Some LIS graduates indicated that they were satisfied with the knowledge they had acquired from the department.

## **5.8 SUGGESTIONS FOR IMPROVEMENT TO THE LIS CURRICULUM**

The respondents were then asked to suggest what should be removed and/or added to the DIS curriculum. Most respondents suggested that Communication Science modules, indigenous knowledge systems and all IT modules should be removed. Others suggested that modules such as cataloguing and classification, programming, information and knowledge management, business intelligence, graphic design, customer care, database management, school librarianship, and library and information systems should be included in the curriculum. Others suggested that there should be a 50-50 balance of IT and core Library Science modules – which is now the case. Almost all of the respondents indicated that the DIS should introduce six months of fieldwork.

## **6 DISCUSSION**

Most LIS graduates (2000–2009) studied for the BA Information Science (36 graduates). This may be because the Bachelor of Library Science degree (BLIS) had lost its popularity during that period; student enrolment figures declined to less than 5 for the whole four-year degree programme. In fact, the four year (BLIS) programme was subsequently archived as there were no students. Students preferred the three-year BA



(Information Science) degree programme (that graduates, in their responses, seemed to be unsatisfied with). One possible reason for this was the growing hype around information technology (IT). Most students wanted to study IT-related courses and the BIS programme offered such modules.

Most graduates were employed in local and provincial governments and the national government, possibly stemming from a shortage of Library Science skills in the public sector. A study by the Department of Arts and Culture (2010) identified the shortages in their report entitled: “The Demand for and Supply of Skills in Library and Information Services, Archival Services and Records Management.” Lutwana and Kigongo-Bukenya (2004) also found that the public sector is one of the main employers of LIS graduates. The South African public sector has a renowned internship programme offered by local, provincial and national governments to graduates. This might also explain why most LIS graduates were working in the public sector. The graduates are employed in libraries. Even those who obtained the BA Information Science found themselves working in libraries. Only a small number of students who study Information Science work in core IT industries. This was also noted in a related study (Aina & Moahi 1999) showing that LIS students who studied at the University of Botswana work in library settings.

It is encouraging to learn that students are applying the knowledge and skills that they learned from the department. This suggests that the curriculum is relevant to the LIS job market. Kajjage (nd) also found that LIS students are happy with the skills and knowledge they acquired from the LIS curriculum. Unfortunately, in our case, not all students were happy with the skills and knowledge that they acquired from the department. Others complained that they were not taught critical skills such as cataloguing and classification, and they did not do in-service training. The former complaint comes from those who studied BA Information Science. The DIS did not offer cataloguing and classification modules to BA (IS) students until recently. Although some LIS graduates were happy with the skills and knowledge they obtained from the department, half were not happy with their qualifications. The general sentiment was that the course lacked specialisation. The three-year BA (IS) programme focuses on preparing graduates to work in the broader information and knowledge management field. Respondents strongly believed that a fieldwork component should be added to the DIS curriculum (BA-IS). This would expose students to a real work environment in the library and information centres.

It should, however, be noted that the four-year professional Bachelor of Library and Information Science programme, in which all the professional LIS courses are included, has lately increased in enrolment to 50 students over the last two years (the 2011 enrolment figure stands at 35). There is a fieldwork component in this programme and students also take two non-LIS majors for their qualification from their second year of study. The BA (IS) has also been reviewed and revised. Cataloguing and classification has been introduced and students can now specialise from the third year of study. Furthermore, fieldwork logistics are being worked out for both the core (BA-IS and BLIS) undergraduate qualification programmes. Due to problems of getting attachment places in IT-related firms for students taking BA (IS), it is preferred that students engage

in more practical work and produce tangible projects/a portfolio. The projects should provide practical skills such as those employed in developing a website instead of proceeding to an unknown fieldwork environment.

## 7 CONCLUSION AND RECOMMENDATIONS

The study concludes by establishing that most LIS graduates were employed, and that most had been employed for more than two years. The implication is that LIS graduates from the University of Zululand are marketable. However, a quite unexpected discovery was that their main employer was the government, and that most were employed by libraries. It had been assumed that majority of graduates worked in the private/corporate sector as records managers, information and knowledge specialists, archivists, web developers, or taught ICT literacy in schools. It is believed that the graduates had not expected libraries to be their main employers, hence their dissatisfaction with BA (IS) degree and not necessarily the department. It was also noted that some graduates are filling jobs such as stack attendant or spine marker – even at the University of Zululand Library and even though they have held their degrees for some time. This applied especially to Information Science graduates who had studied mostly information technology (IT) related courses and is discouraging.

As much as the LIS graduates were happy with the knowledge and skills they had obtained from the department, they were not happy at all with the curriculum that offered to them. The curriculum has, however, been revised and the changes implemented since 2010. In addition, the department will continue reviewing the BA (IS) regularly. The changes introduced are likely to make graduates employable in library environments. The fieldwork for BA (IS) is being introduced in 2011, but the BLIS fieldwork course/module and activity has existed all along. The challenge is to introduce fieldwork in the third year of the BA (IS) programme through in-service learning. Interestingly, the curriculum reviewers (external assessors) find the programme (BA-IS) to be quite appropriate. They have also emphasised the need for fieldwork and the integration of Library Integrated Systems into the programme. (See appended undergraduate qualification programme.)

The positives raised above also highlighted contradictions, however. While respondents stated that the skills that they had obtained from DIS were relevant to their respective jobs, they were also not satisfied with the DIS curriculum. Some respondents, particularly BA Information Science graduates, complained about having had to take IT-related modules instead of core Library Science modules (cataloguing and classification), despite the fact that BA (IS) is 50 per cent IT and 50 per cent LIS. Without the 50 per cent IT content, it would be impossible for the respondents to keep up with the demands of their profession. Despite this, we take serious note of the outcome of this study as it applies to curriculum review and development.

We therefore recommend that the department review its curriculum regularly to keep up with the ever-changing information environment. Proper and complete student records

should also be kept to enable studies such as this one to be run well into the future. We also recommend that the department engage seriously in introducing an internship programme for BA Information Science programme students at third year level, as is already done in the BLIS (four-year) qualification programme.

This study is not without its limitations. The major limitation is the low rate of respondents who participated. Only 50 of the intended 125 participated (that is 40%). Secondly, the snowball sampling directed us to employed graduates only and it was difficult to trace unemployed graduates.

## REFERENCES

- Administrator. 2009. About us. <http://www.lis.uzulu.ac.za/index.php/about-us> (Accessed 1 June 2010).
- Aina, LO & Moahi, K. 1999. Tracer study of the Botswana library school Graduates. *Education for Information* 17(3):215–245.
- Alemna, AA. 1999. Career development: follow-up studies of former graduate students of the Department of Library and Archival Studies, University of Ghana, 1991/1992 to 1996/1997. *Education for Information* 17:35–42.
- Alemna, AA. 1991. Characteristics and careers of past postgraduate diploma students of the Department of Library and Information and Archival Studies of the University of Ghana: 1981/88–1987/88. *African Journal of Library, Archives and Information Science* 1:45–50.
- Anadiran, GT. 1988. Reaction of past students to Bachelor of Library Science Graduates of Ahmadu Bello University, Zaria, Nigeria. *Education for Information* 6:39–59.
- Association for African Universities. 2002. Regional workshop on tracer studies of past university students. <http://www.aau.org/> (Accessed 1 June 2010).
- Boaduo, NA-P, Mensah, J & Babitseng, SM. 2009. Tracer study as a paradigm for the enhancement of quality course programme development in higher education institutions in South Africa. Paper presented at the Educational Colloquium, University of North-West, Potchefstroom, South Africa, 20–21 August 2009.
- The demand for and supply of skills in library and information management, archival services and records management 2010. <http://www.dac.gov.za/publications/reports/2010/Draft%20Report%2015%20January%202010.pdf> (Accessed 8 August 2011).
- Kaijage, ES. [nd]. Knowledge and skills of BCom Graduates of the Faculty of Commerce and Management, University of Dar es Salaam in the job market. <http://www2.aau.org/studyprogram/pdfiles/kaijage.pdf> (Accessed 25 January 2011).
- Kisiedu, CO. 1993. A survey of past postgraduate diploma students of the Department of Library and Information and Archival Studies of the University of Ghana: 1970/71–1980/81. *Journal of Information Science*:481–487.
- Lutwama, E & Kigongo-Bukenya, IMN. 2004. A tracer study of the East African School of Library and Information Science graduates 1995-1999 working in Uganda, South Africa. *South African Journal of Libraries and Information Science* 70(2):99–109.

- Mammo, W. 2007. Demise, renaissance or existence of LIS education in Ethiopia: curriculum, employers' expectations and professionals' dreams. *The International Information and Library Review* 39(1):145–157.
- Millington, C. [nd]. The use of tracer studies for enhancing relevance and marketability in online and distance education. [http://wikieducator.org/images/e/e1/PID\\_424.pdf](http://wikieducator.org/images/e/e1/PID_424.pdf) (Accessed 1 June 2010).
- Ocholla, DN. 2001. Curriculum response to a changing national and international environment: theoretical and methodological paradigm on review and revision. *Education for information* 19(1):143–167.
- Ocholla, DN. 2005. An analysis of the job market in Library and Information Services in South Africa: some thoughts and empirical evidence. Paper presented at the 8th LIASA (RETIG) Annual Conference, Nelspruit, Mpumalanga, 25–30 September.
- Rosenberg, D. 1989. Survey of the skills and training needs of information professionals in Kenya. Research report, Faculty of Information Science, Eldoret, Kenya.
- Rosenberg, D. 1994. Achieving the optimum curriculum: a survey of BSc in Information Sciences curriculum in the context of market needs in Kenya. Research report, Faculty of Information Science, Eldoret, Moi University.
- Rugambwa, I. 1998. Brief communication: regional programme in Information Science in sub-Saharan Africa: follow-up studies of SISA 15 MSc.I.S. Graduates 1990/92– 1994/96. *The International Information and Library Review* 30(3):267–274.
- Stilwell, C. 2004. Alumni perception of a postgraduate information and Library Science education programme at the University of Natal, South Africa. *South African Journal of Libraries and Information Science* 70(1):20–29.
- University of Zululand, Department of Information Studies. 2009. *Annual report 2009*. Kwadlangezwa: Department of Information Studies, University of Zululand.
- University of Zululand, Department of Information Studies. 2010. *Business plan 2010*. Kwadlangezwa: Department of Information Studies, University of Zululand.

**APPENDIX A: GRADUATION STATISTICS 2000–2009**

Department of Information Studies, UNIZUL		GRADUATION STATISTICS 2000–2009										
Title	Codes	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Bachelor of Arts in Information Science	AIDEG1	0	0	0	3	8	10	11	26	15	21	94
Bachelor of Library & Information Science	AIDEG2	14	14	16	15	2	14	6	0	3	3	87
Postgraduate University Diploma in Library and Info.Science	AIDIP1	0	0	0	0	1	3	7	2	2	3	18
Postgraduate University Diploma in School Librarianship	AIDIP2	0	0	0	0	0	0	2	2	5	4	13
Bachelor in LIS (Honours)	ALB500	0	3	2	3	0	3	3	3	2	2	21
Master's in LIS	ALB700	0	0	2	2	1	0	0	0	1	2	8
Doctor of Philosophy (LIS)	ALB800	0	0	1	0	3	0	1	3	0	0	8
<b>Total</b>		<b>14</b>	<b>17</b>	<b>21</b>	<b>23</b>	<b>15</b>	<b>30</b>	<b>30</b>	<b>36</b>	<b>28</b>	<b>35</b>	<b>249</b>

## APPENDIX B: MODULES OFFERED BY THE DIS

### *Core Library and Information Science modules: both BA(IS) and BLIS*

<b>Module</b>	<b>Programme(s) offered in</b>
INFORMATION SCIENCE & INFORMATION LITERACY	BA IS and BLIS
INFORMATION SEARCHING & RETRIEVAL	BA IS and BLIS
ENGLISH 1 PART A: LANGUAGE AND LITERATURE	BA IS and BLIS
ENGLISH 1 PART B: LANGUAGE AND LITERATURE	BA IS AND BLIS
MANAGEMENT PRINCIPLES & PRACTICES	BA IS and BLIS
LIBRARIES AND INFORMATION CENTRES	BLIS
KNOWLEDGE MANAGEMENT	BA IS and BLIS
INFORMATION-SEEKING BEHAVIOUR	BA IS and BLIS
RECORDS MANAGEMENT	BA IS and BLIS
RESEARCH METHODOLOGY	BA IS and BLIS
INFORMATION ETHICS	BA IS AND BLIS
COLLECTION DEVELOPMENT	BLIS
INFORMETRICS	BLIS and BIS
MARKETING PRINCIPLES	BIS and BLIS
MEDIA AND USER STUDIES	BLIS
SETTING UP A SCHOOL LIBRRY	BLIS
CATALOGUING AND CLASSIFICATION	BLIS and BA IS
READERSHIP AND CHILDREN'S LITERATURE	BLIS
INDEXING AND ABSTRACTING	BLIS and BA IS
PUBLIC RELATIONS	BLIS and BA IS
COMMUNICATION SCIENCE	BLIS and BA IS

**Note:** At least two non-LIS majors are offered in the four-year BLIS programme, constituting 50 per cent. At least 25 per cent non-LIS courses are offered in the BA (IS) qualification programme.

### *Core IT modules*

COMPUTER TROUBLESHOOTING & REPAIRS	BA IS
ASSEMBLING & UPGRADING COMPUTERS	BA IS
MULTIMEDIA 1	BA IS
MULTIMEDIA 2	BA IS
COMPUTER LITERACY FOR INFORMATION STUDIES 2	BA IS and BLIS
COMPUTER LITERACY FOR INFORMATION STUDIES 1	BA IS and BLIS
COMPUTER MEDIATED COMMUNICATION	BA IS
ELECTRONIC PUBLISHING	BA IS and BLIS
WEB PAGE DESIGN 1	BA IS and BLIS
WEB PAGE DESIGN 2	BA IS AND BLIS
SETTING UP WEB SERVERS 1	BA IS
SETTING UP WEB SERVERS 2	BA IS
NETWORKS AND COMPUTER CENTRE MANAGEMENT	BA IS

## APPENDIX C: QUESTIONNAIRE

Dear respondent

**RE: A tracer study of Library and Information Science (University of Zululand) Graduates 2000–2010.**

The purpose of this study is to trace graduates of the Department of Library and Information Science who graduated in the year 2000 to 2010 in order to find out where they are, what they are doing and what skills, knowledge and attitudes (KSA) are required in their jobs, where applicable, and the existing KSA gaps for intervention. The information obtained is for future capacity building interventions by the Department.

We kindly request you to participate in the study. Participation is voluntary. Please be assured that the information collected from you will be for research purposes only and your responses will be strictly confidential. The findings of this study will be made known to you once the survey is completed.

We kindly request that you complete the attached questionnaire.

Thank you

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Phone-0359028464/0823724638

## SECTION A

### 1. Demographic details

Name (optional).....Gender .....

Physical Address .....email.....

Tel.....Cell.....

## SECTION B

### 2. Educational background

Please enter all qualifications obtained at UZ

Degree	Year graduated

**If you are currently employed, please answer section C, if not please answer section D, and if you are self-employed, please answer section E.**

## SECTION C

### 3. Employment details

3.1. Name of employer (company name)

3.2. Sector

Private  public  Parastatal  NGO

Other .....

3.3. Physical address

3.4. For how long have you been working there?



- less than a year                       more than a year   
more than two years                       more than five years

3.5. How did you get the job?

- advert                       employment agency                       internship   
personal contacts                       head hunting                       other

3.6. What is your employment position? (e.g. librarian, lecturer, knowledge manager etc)

3.7. Explain in detail what your job entails (job description. Please submit your job description if possible)

3.8. What skills are required for your job? (e.g. communication, computer literacy, etc).

3.9. What knowledge is required for the job? (e.g. knowledge management, records management, cataloguing, etc)

3.10. What kind of attitude is required for the job (e.g. teamwork, creativity, etc)

#### **4. Education and skills in relation to the job**

4.1. Do you think the skills you learned at UZ are relevant to your job? Please explain

4.2. Do you think the knowledge you acquired at UZ is applicable/relevant to your job? Please explain?

4.3. Were you satisfied with curriculum offered to you by the DIS? Explain.

4.4. What do you think must be removed from/added to the DIS curriculum? Please explain.

## SECTION E

### 6. *If self-employed*

6.1. For how long have you been self-employed?

less than a year

more than a year

more than two years

more than five years

6.2. Please describe your business.

6.3. Is it information related?

6.4. What knowledge, skills and attitude are vital for the business?

1. Knowledge

2. Skills

3. Attitude

6.5. Did you acquire that knowledge and skills from the LIS curriculum? Explain.

6.6. What skills, knowledge and attitude do you think should be taught/given to LIS students for self-employment?

7. Any general comments?

Thank you

## NOTES

- 1 This paper was presented at the 6<sup>th</sup> Biennial ProLISSA Conference, Pretoria, 9–11 March 2011.