

KNOWLEDGE MANAGEMENT ISSUE: A CASE STUDY OF THE DEPARTMENT OF EDUCATIONAL ADMINISTRATION AT A SAUDI UNIVERSITY

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ABSTRACT

This research employs a qualitative methodology to investigate Knowledge Management (KM) in the department of educational administration at a Saudi university. The research seeks to establish an understanding of KM, including its implementation and challenges. The findings from the participants are grouped into three major themes, each of which contains a number of sub-themes: (1) Understanding KM; (2) applying KM; and (3) the challenges of applying KM. The study is divided according to the participants' understanding of KM into five sub-themes: (1) the process of knowledge creation, socialisation, externalisation, combination and internalisation; (2) sharing tacit knowledge; (3) finding data electronically; (4) transferring tacit knowledge to explicit knowledge; and (5) sharing information. The results reveal the majority of interviewees view the implementation of KM as straightforward in the area of research and weak in the area of administration. All the interviewees stated that the main challenges when implementing KM in their department relate to issues of administration and culture.

INTRODUCTION

All organisations, in both the public and private sectors, aim to both fulfil their goals and objectives and to be competitive. However, this cannot be achieved without sharing ideas and knowledge between members within the organisation. Knowledge has previously been viewed from several perspectives, i.e. abstract, philosophical, religious and practical (Asoh, Belardo, & Neilson, 2002). Its history stretches back over several thousand years, during which there has been a consideration of the meaning of knowledge, along with how it can be created and shared in an effective manner. Organisations have since become increasingly aware of the importance of knowledge as a primary resource, including in both the commercial sphere and the public sector. However, knowledge itself is insufficient to reach effective decisions concerning some issues within an organisation, and there is also a need to manage knowledge in order to compete successfully in the marketplace.

The concept of KM has several benefits, including:

- To identify required knowledge;
- To encourage innovation throughout an organisation;
- To reduce cost;
- To create technical knowledge;
- To increase the value of knowledge;
- To invest intellectual capital; and
- To increase awareness among workers concerning events within an organisation (Alzyadat & Alqutawi, 2010).

The researcher recognized from the literature that KM is a relatively new field of study, it has recently received considerable attention in the academic field. Higher Education Institutions in any educational system have aims to be achieved such as prepare new generations with the skills, cultural and scientific literacy, flexibility, and capacity for critical inquiry and moral choice

necessary to make their own contribution to society (Birgeneau, 2005, p. ix). However, all these and other objectives are based on knowledge that need to be managed.

This paper therefore focuses on the practical issues of KM in a department of educational administration in a Saudi university. It focuses on the following research questions:

1. To what extent do members understand the concept of KM?
2. In what way is the concept of KM applied within the department?
3. What are challenges of implementing KM in the department?

LITERATURE REVIEW

In order to understand the concept of 'Knowledge Management', it is first necessary to understand the concept of knowledge, i.e. what it is, and to identify the differences between knowledge and information, and the differences between knowledge and data. Data consists of numbers, words, letters, facts or figures without any context, i.e. it is not organised in any way, and provides no further information. Thierauf (1999) states that it is: the facts and figures that unstructured and then have least impact on the typical manager. Information consists of data processed to be useful, providing answers to the questions of 'who', 'what', 'when' and 'where'. Thus, information consists of the relationships between pieces of data, or between the collection of data and further information. In terms of the meaning of knowledge management, Empson (1999) states that:

Knowledge is a combination of information, experience and insight that may benefit the individual or the organisation. It is the appropriate collection of information, such that its intent is to be useful. Knowledge is derived from classified data that becomes valued as information when placed in a specific context to contribute to decisions or actions. (Empson, 1999, p. 12)

Additionally, knowledge in all its forms can be classified as either explicit or tacit. Explicit knowledge is capable of being codified into words, while tacit knowledge, in order to be shared, needs to be externalised from individual experience (Davenport, Jarvenpaa, & Beers, 1996; De Long & Fahey, 2000; Grant, 1996; Nonaka, 1994; Sunassee & Sewry, 2002; Varun & Thomas, 2000).

Explicit knowledge is systematic, formal and documented, enabling it to be easily distributed, shared and communicated in clear manner. Explicit knowledge is stated and recorded as words, codes, mathematical numbers, scientific procedures, and music. It can be found on the Internet, and in books, documents, emails and other resources, both oral and visual (Polanyi, 1997).

On the other hand, tacit knowledge is not easily expressed, captured, recorded, formalised and articulated. It is personal, being stored within the minds of individuals, and developed through social interactions, and it is therefore challenging to identify which elements of tacit knowledge can be taken and made explicit. Uriarte (2008) states that:

Once relevant tacit knowledge is identified, it becomes extremely valuable to the organisation possessing it, because it is a unique asset that is difficult for other organisations to replicate. In any organisation, tacit knowledge is the essential prerequisite for making good decisions. (Uriarte, 2008, p. 5)

Coakes (2003) opines that tacit knowledge includes a variety of knowledge dimensions (e.g. mental models, beliefs, and intuition) and thus has been created from experiences and should be included in new knowledge, according to the needs of the environment. Approximately 80% of organisational information is tacit knowledge, leading to the potential for an employee's retirement or resignation to play a considerable role in the loss of knowledge, thus leading to the need to take KM into consideration (Oakes, Franke, Quartz, & Rogers, 2002).

Hislop (2005) employs the following characteristics to distinguish the differences between explicit and tacit knowledge: (see Table 1)

Table 1
The Characteristics of Tacit and Explicit Knowledge

Tacit knowledge	Explicit knowledge
Inexpressible	Codifiable
Subjective	Objective
Personal	Impersonal
Context-specific	Context independent
Difficult to share	Easy to share

Finally, it appears that it is impossible to separate explicit and tacit knowledge, and it is also impossible to understand explicit knowledge without being in possession of tacit knowledge. Therefore, all organisations need to focus on both forms of knowledge (Hislop, 2005). There are a considerable number of definitions in the literature concerning the concept of KM; however, there is still a lack of clarity and agreement concerning its definition, although all highlight the uniqueness of information management.

In general, definitions of KM are linked to those ‘processes’ attributable to knowledge. Scarbrough, Swan, & Preston (1999, p. 160) note that it is: “any process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it resides, to enhance learning and performance in organisations”. KM consists of ‘leveraging intellectual assets to enhance organisational performance’ (Stankosky, 2008), while Duhon (1998) states:

It is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise’s information assets. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers. (Duhon, 1998, pp. 23-36)

KM has also been defined as a process, or practice, of creating, acquiring, capturing, sharing and re-using organisational knowledge (i.e. know-how) to improve performance and achieve the goals and objectives of an organisation (Abell & Oxbrow, 2001; Townley, 2001; White, 2004). Finally, KM can be simply defined as making available, and organising, significant knowledge, wherever, and whenever, it is needed.

It can be seen from the literature that KM is complex and multifaceted. However, the literature also identifies several means of simplifying the different steps within the KM process. Some researchers state that the KM process can be divided into three, while others divide it into four. Hislop (2013) states that the KM process can be divided into three main stages: (1) identifying and clarifying important knowledge; (2) gathering all the collected knowledge together into a central source; and (3) structuring it in a systematic way to make it available to others. Finally, information and communication technologies play a leading role in KM processes (Durcikova & Gray, 2009).

Alqahtani (2014) states that KM can be divided into four main processes, capable of being further classified into seven sub-processes: (1) knowledge identification; (2) knowledge acquisition; (3) knowledge generation; (4) knowledge storage; (5) knowledge improvement; (6) knowledge distribution; and (7) knowledge application.

Despite the growing interest in KM in a number of different fields, it is agreed that some challenges can influence the implementation of this concept. Some researchers indicate that the

challenges in KM consist of: (1) weakness in knowledge sharing culture; (2) lack of cohesion between portal and organisational structure; (3) lack of commitment and support from senior management; (4) organisational strategy weakness; (5) information overload; (6) content management weakness; and (7) organisational strategy weakness (Remus, 2007; Sage & Rose, 1999; Uden & Naaranoja, 2007).

A number of researchers, including Davenport (2000), state that one of the greatest challenges in implementing KM is to address issues of cultural change. Huang (1998) suggests four major processes in forming a culture of KM: (1) making knowledge visible; (2) increasing knowledge intensity; (3) building knowledge infrastructure; and (4) developing a knowledge culture.

Wilson (2002) states that ambiguity between tacit and explicit knowledge within an organisation is a challenge, in addition to the difficulty of identifying information and knowledge necessary to incorporating knowledge into a management programme. Coakes (2003) adds that the current organisational culture (i.e. a lack of coordination between all activities within the organisation and lack of support from senior management) presents challenges for the application of KM.

Many researchers note the benefits of implementing KM in an organisation, including: (1) support of innovation within the organisation; (2) increasing productivity; (3) improving performance; (4) improving decision-making processes; increasing staff awareness of events taking place within the organisation; and (5) promoting the principle of cooperation (Wickham, 2001; Wiig, 1994).

HEIs currently recognise the value of KM in improving their changing role in society. Higher Education (HE) is not isolated from the remainder of the field, leading to HEIs being able to benefit from KM in the achievement of their objectives. Successful KM depends on processes that improve academic and administrative services at a university. It is widely believed that supporting educational administration through the use of KM will, in turn, support learning and teaching (Petrides & Guiney, 2002).

The most recognised strategies of KM in HE and other fields, include: culture, leadership, technology and measurement (American Productivity and Quality Center and Arthur Andersen Consulting, 1997). The five key areas of KM that can be applied at universities are: (1) research; (2) curriculum development; (3) alumni administrative services; and (4) strategic planning (Kidwell, Linde, & Johnson, 2000). Mikulecka & Mikulecky (2005) conclude that the university environment is the most appropriate for the application of the principles and methods of KM. Researchers have identified the following reasons: (1) universities generally have a modern information infrastructure; (2) they are accustomed to sharing knowledge with others, including between teaching staff lecturers and students; (3) faculty members do not hesitate, and are not afraid, to publish and share their knowledge; and universities offer many activities, including educational, research, and advisory services, all of which are organised by means of KM.

A large number of companies also apply a KM system. However, the literature reveals the limitations of the application of KM in universities. The researcher has identified five universities that apply KM in their system: (1) The Yung Ta Institute of Technology and Commerce (YTIT); (2) The University of Plymouth (UPC); (3) The Multimedia University (MMU); (4) The University Purta Malaysia (UPM); and (5) The University of Malaya.

Rodrigues and Pai (2005) identify the key factors (or variables) of KM as: (1) leadership and support; (2) technology and infrastructure; (3) knowledge creation; (4) acquisition and learning; (5) dissemination and transfer; (6) application and exploitation; (7) competency of personnel; and (8) a culture of sharing.

The researcher will focus on the areas identified by Kidwell et al. (2000), and will include a number of factors from Rodrigues & Pai (2005), e.g. technology and infrastructure; competency of personnel; a culture of sharing; and leadership and support.

Only a limited number of studies have been undertaken concerning the concept of KM. The majority have been conducted in a business and marketing field, and few have been conducted in the field of HE. Mahjoub (2004), Abu Khudair (2009), Al-Otaibi (2007) and Audi (2010) have conducted research on KM; however, they have all employed quantitative methods, while the current study will use qualitative research, as described below.

The current research does not aim to apply a module or strategy of this concept, but rather to explore the existence and issues of KM in a department of educational administration at a Saudi university, in order to answer the research questions, as previously noted:

1. To what extent do members understand the concept of KM?
2. In what way is the concept of KM applied within the department?
3. What are challenges of implementing KM in the department?

METHODOLOGY

The research method used for this current research, is the case study, a method well suited to an exploratory study (Yin, 1994). The research approach employs interviews as the primary source of evidence. Yin (1994, p. 84) believes that: 'Interviews are one of the most important sources of case study information'.

Smith, Harre & Langenhove (1999) are of the opinion that interviews can be divided into three main types: (1) structured; (2) semi-structured; and (3) unstructured. Semi-structured interviews appear to be the most appropriate for use by a researcher wishing to explore perceptions and experiences, understandings and interpretations. Semi-structured interviews carry greater flexibility than other methods (e.g. structured interviews and questionnaires) (Smith et al., 1999).

The interview questions are designed according to the framework adopted from Kidwell et al. (2000), with the five key areas suitable for application for universities: research, curriculum development, alumni services, administrative services and strategic planning.

To gain a complete picture of the issues related to KM covered in the current study, the researcher interviewed the Head of Department of educational administration and all thirty faculty members. The interview guide for this study contains themes related to the study objectives. The relationship between the interview questions, research questions and framework are listed in the Table 2.

Table 2: *The Interview Guide*

Interview questions	Research questions	Relations to the framework
Have you heard of the concept of Knowledge?	To what extent do members understand the concept of KM?	Member understanding of KM.
Have you heard about the concept of Knowledge Management?		First: The differences between data, information and knowledge, in addition to the differences between tacit and explicit knowledge.
If yes: What do you know about it?		Second: Are participants aware of the components of implementing KM, i.e. creating, acquiring, capturing, sharing and using knowledge.
If no: Do you think it is important to know about it, and why?		

In order to apply KM at the department, there are a number of factors that can be applied. To which factors do you consider it important to apply KM in your department?	How are concepts of KM applied in the department?	Participant's point of view concerning the areas of KM that can be applied in the department, e.g. research; curriculum development; alumni services; administrative services and strategic planning; technology and infrastructure; competency of personnel; and sharing culture.
Are there any challenges of applying KM in your department?	What are challenges of implementing KM in the department?	How participants express their opinion about the challenges that may affect the implementation of this concept, i.e. weakness in knowledge sharing culture; organisational strategy weakness; information overcrowding; and other factors that can be raised from the participants.

RESULTS

The responses to the interviews identified a number of common patterns for analysis. The collected data from the semi-structured interviews were analysed manually to answer the research questions. Based on the research questions, the findings from the participants were grouped under three major themes, each with a number of sub-themes. (See Table 3)

Table 3:
Understanding KM - Applying KM – Challenges

Understanding KM	Applying KM	Challenges of applying KM
<ul style="list-style-type: none"> • Process of knowledge creation, socialisation, externalisation, combination and internalisation. • Sharing tacit knowledge. • Finding data electronically. • Transferring tacit knowledge to explicit knowledge. • Sharing information. 	<ul style="list-style-type: none"> • Partial implementation and tacit knowledge. • Research. • Curriculum development. • Administrative services. • Technology and infrastructure. 	<ul style="list-style-type: none"> • Administration • Culture

The First Major Theme: Understanding Km

This major theme can be divided based on interviewee response into five sub-themes: (1) a process of knowledge creation, socialisation, externalisation, combination and internalisation;

(2) sharing tacit knowledge; (3) finding data electronically; (4) transferring tacit knowledge to explicit knowledge; and (5) sharing information. (see Table 4)

Table 4: *Frequencies of Understanding Km*

Mentioned points	Frequencies
1. Process of knowledge creation, socialisation, externalisation, combination and internalisation.	4
2. Sharing tacit knowledge.	5
3. Finding data electronically.	11
4. Transferring tacit knowledge to explicit knowledge.	4
5. Sharing information.	7

Table 4 reveals that interviewees understand KM in a number of different ways. It appears that they have little understanding of its components, but they note some aspects of the concept. The majority of interviewees regarded the most important function of KM as obtaining data electronically, or sharing information, while only three perceived KM as model of knowledge creation, as proposed by Nonaka (1994). A further small number of interviewees viewed KM as sharing tacit knowledge and transferring tacit knowledge to explicit knowledge. It appears from these points of view that participants have little understanding of KM and they relate it to the sharing of basic data and information rather than a process of managing knowledge on a higher level.

The Second Major Theme: Applying Km

This major them can be divided into five sub-themes: (1) partial implementation and tacit knowledge; (2) research; (3) curriculum development; (4) administrative services; and (5) strategic leadership, support, technology and infrastructure. (see Table 5)

Table 5: *Frequencies of Applying Km*

Mentioned points	Frequencies
Partial implementation and tacit knowledge	13
Research	15
Administration	7
Technology and infrastructure	14
Curriculum development	10

The majority of the interviewees emphasised that KM is applied in some areas within the department, but that the majority of knowledge is tacit and does not transfer to explicit knowledge. They also stated that most knowledge (and even some information) is not available systematically, but needs to be obtained verbally from faculty members. The majority of interviewees emphasised that the implementation of KM can be seen clearly in the area of research, in which many resources are available both manually and electronically. However, the majority of interviewees confirmed that the implementation of KM is weak in the area of administrative services, i.e. students are given insufficient information concerning their rights, including the availability of research services. Faculty members also experience difficulties in obtaining knowledge related to administrative services. In addition, some interviewees highlighted the area of technology and infrastructure, stating that they spend much of their time at home, due to the lack of facilities such as computers

and printers. They also noted that there is a lack of knowledge available in electronic form, and that they believe this is important for the implementation of KM. When it comes to curriculum development, interviewees stated that the department is still in the process of generating knowledge. Each member has his/her own knowledge concerning the development of courses, but fails to share such knowledge. The board of the department has raised this issue, including creating a commission to transfer all tacit knowledge in this area to be explicit to faculty members.

The Third Major Theme: The Challenges Of Implementing Km

This theme can be divided into two clear sub-themes: (1) administration and (2) culture. (see Table 6)

Table 6: *Frequencies of the Challengers of Implementing Km*

Mentioned points	Frequencies
Administration	15
Culture	13

Some interviewees (particularly those with a background in understanding the concept of KM) emphasised that the majority of challenges of implementing KM in the department concern administration and culture. All interviewees noted some obstacles in relation to administration originating from the current leadership method: 1. The lack of training programmes for both students and faculty members concerning the concept of KM and its affect and importance. 2. The lack of recognition, i.e. faculty members stated that the department administration does not pay sufficient attention to what they possess in terms of knowledge and do not organise the means of benefiting from such knowledge, including how to manage it. A faculty member experienced in this topic stated that she has been asked to apply KM for the department, but when she commenced this procedure, and had managed to overcome its challenges, the Head of Department replaced her, and moved her to a new position. Interviewees thus emphasised that knowledge cannot be managed with uncertain decisions. 3. The large number of tasks given to faculty members. All interviewees stated that they are given large numbers of tasks that distract them from applying KM, and, as a result, tacit knowledge is increased, but then disappears when faculty members retire or move to another university.

The majority of interviewees noted that culture was the second sub-them that influenced or enabled KM. They claimed that faculty members demonstrate little enthusiasm for sharing knowledge: (1) due to a lack of trust; and (2) their lack of confidence concerning their knowledge. A number of interviewees stated that members of the department (including students) are unwilling to search for knowledge themselves, but prefer to obtain it rapidly and verbally. During the time the researcher was talking to a faculty member, a large number of students arrived to ask about knowledge that the researcher assumes was freely available in hard or soft copy. However, the students gained this knowledge verbally, including taking notes. Then, the researcher took an action to shed light on the concept KM with some faculty members. The researcher meet with faculty members to discuss some points in both sides academic and administrative sides. Academic side: The importance of providing students with a clear course description and its impact on students when starting their courses clearly, and its impact on reducing continuous questions and concerns about the course. At the end of the discussion, the main points to be included in any course description were summarised as: General information about the course in both Arabic and English (course title, code and number), course objectives, Teaching methods and activities, The

procedural requirements of decision making, Distributing a scheduled plan, Method of assessment, Course evaluation, References, Methods to contact faculty members for additional details, from the Professor scheduled, and providing available office hours to faculty members. Create a club for students in the department of educational administration.

In terms of the academic side, the researcher achieved the following points:

- Creating procedural operations to support communication throughout the university, especially with regard to matters affecting students under the deanship of graduate studies.
- Creating a report about the department, including a brief history of the department, program specifications, the vision, mission and objectives of the department, details of faculty members and finally the number of students in the department.
- Collecting some information, data and knowledge from some college, centers, deanships, vice presidencies, institutes, and committees.
- Establishing several files for administrative purposes, such as an achievements file for the department generally and files for faculty members and students particularly.

CONCLUSION

As noted in the literature, there are a limited number of studies concerning the concept of KM. The majority have been undertaken in the fields of business and marketing and little has been conducted in relation to higher education. In addition, all previous studies have employed quantitative research.

The current study has investigated issues and practices relating to KM in a department of educational administration at a Saudi university, based on a qualitative approach, and using semi-structured interviews. The aim has been to answer three main points:

1. To what extent do members understand the concept of KM?
2. In what way is the concept of KM applied within the department?
3. What are challenges of implementing KM in the department?

Even though some researchers have concluded that the university environment is the most appropriate for the application of the principles and methods of KM (Mikulecka & Mikulecky, 2005), this current study reveals a number of weaknesses in the understanding and implementation of this important concept within the department. Participants understand the central meaning of KM as referring to keeping data available electronically, while only those interested in reading about this concept note the true meaning of KM. Thus, this result may draw attention to the importance of the concept of KM at the university. The results reveal that KM is clearly implemented in the area of research in the department, with less use being made in areas such as administration and curriculum development. The literature demonstrates that there is currently a process of implementing KM, but due to a lack of understanding of KM in the department, participants did not mention any clear process of its implementation, only their right to find data about the department online, while the concept of KM goes deeper than this view. It also appears that tacit knowledge does not transfer to explicit knowledge. During the process of interviewing, the researcher observed that the majority of knowledge passed between students and faculty members (and between faculty members) was undertaken verbally. Thus, knowledge is not undergoing a clear process that may assist in it being managed and made available. Therefore, it appears that implementing KM inside this department has taken the form of a puzzle, with all those involved attempting to collect basic information in his/her own way, rather than managing knowledge for the whole department.

From the results, it appears that a number of challenges play a leading role in the implementation of KM. The current study has established that the greatest challenge in the

implementation of KM in the department consists of administration and culture. This accords with the findings of Sage and Rose (1999), Remus (2007), and Uden & Naaranoja (2007). In the current study, the lack of recognition and training programmes, along with the large number of tasks, form the clearest area of administrative challenge to the implementation of KM. As noted in the results, culture also plays a considerable role in the implementation of KM. This has led the current researcher to conclude that culture influences the entire work of the department, including a style of leadership that may not support the concept of KM, and potentially other concepts as well.

Finally, individuals spend most of their lives at work, and therefore it is essential to pay attention to the importance of KM, as it can play a considerable role in: (1) ensuring the most effective culture; (2) supporting innovation; (3) saving time; (3) reducing cost and awareness among workers concerning their department. The aim of this current study is to draw the attention of policy makers and decision makers to the department, and to concerns about KM both locally and nationally. In addition, this study aims to promote future researchers to consider this concept in depth, particularly in relation to Saudi culture. Thus, further investigation by researchers may include additional cases within KM, in order to obtain a full picture concerning this concept and its importance in improving the higher education sector.

REFERENCES

- Abell, A., & Oxbrow, N. (2001). *Competing with knowledge*. London: TFPL and Library Association Publishing.
- Abu Khudair, I. (2009). *Knowledge management in higher education: thoughts institutions applications and practices*. Paper presented to the international conference on management development institute of public administration. Saudi Arabia.
- Al-Otaibi, Y. (2007). *Knowledge management and applicability in Saudi Universities: Study applied on the Umm Al Qura University* (PhD thesis. Umm Al Qura University, Saudi Arabia.
- Alqahtani, S. (2014). *The role of knowledge management in the development of the performance of organizations*. Saudi Arabia: King Fahad Library.
- Alzyadat, M., & Alqutawi, M. (2010). *The level of political knowledge in social studies teachers in Jordan and its relationship with some variables*. *Islamic University Journal*, 18, 399-428.
- American Productivity and Quality Center and Arthur Andersen Consulting. (1997). *The knowledge management tool*. Chicago: Arthur Anderson.
- Asoh, D., Belardo, S., & Neilson, R. (2002). Knowledge management: issues, challenges and opportunities for governments in the new economy. In *Proceedings of the 35th Hawaii International Conference on System Sciences*. Piscataway, NJ: IEEE.
- Audi, F. (2010). *The fact of knowledge management in the Palestinian universities and ways to strengthen* (Master's thesis). Islamic University, Palestine.
- Birgeneau, R. (2005). The role of the university and basic research in the new economy. In G. A. Jones, P. L. McCarney, & M. L. Skolnik (Eds.), *Creating knowledge, strengthening nations: The changing role of higher education*. Toronto: University of Toronto Press.
- Coakes, E. (2003). *Knowledge management: Current issues and challenges*. Hershey: Idea Group Inc (IGI).
- Davenport, T. H. (2000). *Mission critical: Realizing the promise of enterprise systems*. Boston, MA: Harvard Business School Press.

- Davenport, T. H., Jarvenpaa, S. L., & Beers, M. C. (1996). Improving knowledge work processes. *MIT Sloan Management Review*, 37, 53-65.
- De Long, D. W., & Fahey, L. (2000). Diagnosing cultural barriers to knowledge management. *Academy of Management Executive*, 14, 113-127.
- Duhon, B. (1998). It's all in our heads. *Inform*, 12, 8-13.
- Durcikova, A., & Gray, P. (2009). How knowledge validation processes affect knowledge contribution. *Journal of Management Information Systems*, 25, 81-108.
- Empson, L. (1999). The challenge of managing knowledge. *Financial Times*, 4, 12.
- Grant, R. M. (1996). Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science*, 7, 375-387.
- Hislop, D. (2005). *The objectivist perspectives on knowledge. In Knowledge management in organizations: A critical introduction*. Oxford: OUP.
- Hislop, D. (2013). *Knowledge management in organizations: A critical introduction*. Oxford: Oxford University Press (OUP).
- Huang, K. T. (1998). Capitalizing on intellectual assets. *IBM Systems Journal*, 37, 570-583.
- Kidwell, J. J., Vander Linde, K., & Johnson, S. L. (2000). Applying corporate knowledge management practices in higher education. *Educause Quarterly*, 23, 28-33.
- Mahjoub, F. (2004). *Knowledge management processes: Introduction to shift to a digital university*. Paper presented at the fourth annual scientific conference. Amman, Jordan: Zitouna University.
- Mikulecka, J., & Mikulecky, P. (2005). *University knowledge management- issues and prospects*. Hardec Kralove, Czech Republic: University of Hardec Karlove.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5, 14-37.
- Oakes, J., Franke, M. L., Quartz, K. H., & Rogers, J. (2002). Research for high-quality urban teaching. *Journal of Teacher Education*, 53, 228-234.
- Petrides, L. A., & Guiney, S. Z. (2002). Knowledge management for school leaders: An ecological framework for thinking schools. *Computers & Education*, 44, 155-172.
- Polanyi, M. (1967). *The tacit dimension*. New York: Anchor Books.
- Polanyi, M. (1997). Creative imagination. In M. Polanyi & R. T. Allen (Eds.), *Society, economics, and philosophy selected papers*. London: Transaction Publishers.
- Remus, U. (2007). Success factors for the implementation of enterprise portals. In *Proceedings of the 39th annual Hawaii international conference on system sciences (HICSS '06)*, 4-7 Jan 2006, Kauai, HI, 8, 182a.
- Rodrigues, L. L. R., & Pai, R. (2005). Preparation and validation of KM measurement instrument: An empirical study in educational and IT sectors. In S. Hawamdeh (Ed.), *Knowledge management: Nurturing culture, innovation, and technology* (pp. 582-593). Singapore: World Scientific Publications.
- Scarborough, H., Swan, J., & Preston, J. (1999). *Knowledge management: A literature review*. London: Institute of Personnel and Development.
- Smith, J. A., Harre, R., & Langenhove, L. (1999). *Rethinking methods in psychology*. London: SAGE Publications.
- Stankosky, M. (2008). *Keynote address to ICICKM*. Paper presented at the international conference on intellectual capital, knowledge management and organizational learning (pp. 9-10).

- Sunassee, N. N., & Sewry, D. A. (2002). A theoretical framework for knowledge management implementation. In *Proceedings of the South African institute of computer scientists and information technologists* (pp. 235-245). Port Elizabeth, South Africa: South African Institute for Computer Scientists and Information Technologists.
- Systems. Harvard Business School Press. Boston, MA *The American productivity and quality center*. Chicago: Arthur Andersen.
- Thierauf, R. J. (1999). *Knowledge management systems for business*. Westport, CT: Quorum Books.
- Townley, C. T. (2001). Knowledge management and academic libraries. *College & Research Libraries*, 62, 44-55.
- Uden, L., & Naaranoja, M. (2007). Portals for knowledge management. In A. Tatnall (Ed.), *Encyclopaedia of portal technologies and application* (pp. 795-799). Hershey, PA: Information Science Reference.
- Uriarte, F. A. jr. (2008). *Introduction to knowledge management*. Jakarta, Indonesia: ASEAN Foundation.
- White, T. (2004). Knowledge management in an academic library: Based on the case study KM within OULS. In *70th IFLA General Conference and Council* (pp. 22-27). Hague, Netherlands: IFLA.
- Wickham, P. A. (2001). *Strategic entrepreneurship: A decision-making approach to new venture creation and management* (2nd ed.). London: Prentice Hall.
- Wiig, K. M. (1994). *Knowledge management: The central management focus for intelligent-acting organizations*. Arlington, TX: Schema Press.
- Wilson, T. D. (2002). The nonsense of knowledge management. *Information Research*, 8, 144.
- Yin, R. K. (1994). *Case study research: Design and methods*. London: Sage Publications.