

Knowledge Management (KM) Practices in Institutions of Higher Learning in Tanzania with Reference to Mbeya University of Science and Technology

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Abstract

This study examined the knowledge management (KM) practices in Institutions of Higher Learning. Specifically, the study examined the level of awareness and understanding of KM among Mbeya University of Science and Technology (MUST) staff, and the existing knowledge management practices in addition to soliciting for the perceptions and opinions of staff on the current KM practices. Primary data were collected from 60 respondents comprising teaching and non-teaching staff using the questionnaire, face-to-face interviews and observation. The major findings of the study revealed that MUST staff were not explicitly aware of KM practices; there were no knowledge management initiatives in place at MUST; moreover, few or no strategies were employed in Managing knowledge; and there was no agreed upon mechanism for knowledge sharing. Thus, this study recommends establishing proper structure to promote and enhance KM practices in the institution. Also individuals should be encouraged to take on board knowledge management practices in their work. Furthermore, KM practices should be an integral part of the organisational culture.

Key words: *Knowledge management, Knowledge management practices, Tanzania*

Introduction

Knowledge can be termed as an experience, values, contextual information and expert insight that provide a framework for evaluating and incorporating new experiences and information. Knowledge often becomes embedded, not only in documents and repositories, but also in organisational routines, processes and practices (Scorta, 2009). In institutions of higher learning knowledge created during academic and administrative processes, in the form of documents and procedures, may become tacit knowledge in form of experiences, judgment, views and perceptions that reside within individuals. Knowledge is created at various levels and in different forms: academic and

administrative processes of teaching, examination, evaluation, admissions, counselling, training, placement, research and consultancy.

Knowledge management does not necessarily encompass managing all the knowledge, but rather knowledge that is the most important to the organisation. It is about ensuring that people have the right knowledge they need, in the right place, and at the right time (NHS National Library for Health, 2005). There are various levels and different capacities in institutions of higher learning which are directly or indirectly expected to create and consume knowledge. These levels include faculty, students' administration, academics, research, training and placement. Therefore, it is important to identify the knowledge that each level contributes to the system and the knowledge each level requires to perform its functions and find ways to apply this knowledge effectively (Bhusry & Ranjan, 2011).

As such, institutions of higher learning share information and knowledge among the academic community within the institution for the nourishment of its core responsibilities. In an era of knowledge society and a knowledge economy, it is clear that universities have a major role to play in creating and disseminating knowledge to the wider society. Traditionally, institutions of higher learning have been sites of knowledge production, storage, dissemination and authorisation. Consequently, knowledge management has become a key issue in institutions of higher learning due to changes in the knowledge culture.

As Rowley (2000) has articulated, institutions of higher learning in general must change their role to respond to the dictates of a knowledge-based society. Due to increased external pressure from competitors, institutions of higher learning are taking advantage of the emerging Information and Communication Technologies (ICTs) to manage and share knowledge, including virtualisation of teaching. In this regard, Maponya (2004) contends that institutions of higher learning have, and always will be, keepers and creators of knowledge as they equip new generations with the skills, cultural and scientific literacy, flexibility, and capacity for critical inquiry as well as moral choice necessary to make their own contributions to the society. Institutions of higher learning (IHL) are in the knowledge business as they are involved in knowledge creation, dissemination and learning. From the mission and purpose of IHL, two issues emerge: first, how is knowledge managed to enhance IHL's competitive advantage? Second, do IHLs effectively manage what they know about their organisations in a systemic and way? To respond to these questions, an in-depth study was conducted to investigate KM practices at the Mbeya University of Science and

Technology (MUST) to examine the level of awareness and understanding of KM among Mbeya University of Science and Technology (MUST) staff, the existing knowledge management practices in addition to soliciting the perceptions and opinions of staff regarding the current KM practices.

Literature Review

Knowledge Management: An Overview

Knowledge management is defined by Business Dictionary (2013) as strategies and processes designed to identify, capture, structure, value, leverage and share an organisation's intellectual asset to enhance its performance and competitiveness. KM process is a synergic mix of human, communication and IT tools (Basu & Sengupta, 2007). The greatest challenge which most managers face in both developed and developing countries is to raise the productivity of knowledge and services. An institution has to raise productivity of knowledge and services to meet the challenges from competitors in the field. As societies become more and more knowledge-based, "the organisations that can identify, value, create and evolve their knowledge assets are likely to be more successful than those that do not" (Mavodza & Ngulube, 2012). The aim of knowledge management is to support learning organisations that provide all employees with access to corporate memory so that both the individuals and organisations as a whole improve. Re-use of knowledge is done all the time during knowledge sharing, interaction and it benefits an individual who sought the advice of a more experienced colleague. Also re-use of knowledge provides long-term advantages; thus necessary systems are critical for harnessing knowledge (Frappaolo, 2006).

Managing Knowledge is accompanied by an ability to retain in the institution, more efficient and effective knowledge workers so as to boost the competitiveness in the market place and improved profitability. A successful Knowledge Management implementation requires that senior management understands the organisation's needs with a clear vision for its future, a grasp of the range of technologies available for enabling the KM process that applies the organisation's business and experience (Bergerson, 2003).

KM practices are founded on four pillars: Knowledge acquisition both internally and externally (suppliers, customers, partners and competitors), knowledge sharing, knowledge reuse and knowledge creation (Frost, 2012; Gamble & Blackwell 2001). KM strategy sets the direction of these practices whereas the achievement of best practices is dictated by good leadership and culture; with good processes and technology being key enablers (Frost, 2012).

Knowledge Management in Institutions of Higher Learning

Global Perspective

Institutions of higher learning today need to focus on how to enhance the students' quality and skills to cope with the labour market demands. Changing nature of work increases the need for twenty-first century skills preparation (Mahdinezhad, 2011). Knowledge management increases institutional innovation as knowledge is the source of new ideas, hence an institution could boost the efficiency, effectiveness, and quality of graduates who can satisfy the employers' needs at the entry level of employability in future (Ramakrishnan & Yasin, 2012 as cited by MMHE, 2012). This knowledge has to be collected, conserved, and made accessible to everybody in the organisation (Madhar, 2010).

KM initiatives are expanding across institutions of higher learning. The competitive benefits of KM efforts have been demonstrated and documented in the industry, government and in the academic world. For instance, towards achieving the objective of its Vision 2020, Malaysian Public Institutions of Higher Education's contribution to the Vision is the production of knowledgeable human power or knowledge workers to the country. As other non-profit organisations, Malaysian Public Institutions of Higher Education have taken the challenge of the implementation of KM in their respective organisations on board (Abu-Bakar & Alias, 2005). Many educational institutions want better ways of transforming knowledge into effective decision-making and action. Thus, institutions of higher learning focus on making individual knowledge re-usable for the achievement of their missions. To achieve their institutional missions, that is, education, research and service to society, institutions of higher learning need to manage the processes associated with the creation of knowledge and innovation through shared ideas (AL-Hakim *et al*, 2012). As Sulisworo (2012) argues, IHLs seek to share information and knowledge among the academic communities within and outside the institutions and normally those institutions that succeed in knowledge management are likely to view knowledge as an asset and to develop organisational norms and values which support knowledge creation and sharing. Therefore, knowledge management can become part of an organisation's capital asset and to achieve the institutional mission, that is, education, research and service to society, IHLs need to manage consciously and explicitly the processes associated with the creation of knowledge, its sharing and re-use.

A major challenge to any institution of higher learning is how to mobilise its researchers and academicians to understand what knowledge they lack, what is demanded, how an organisation can acquire new products using new methods and how it can efficiently market its products (Nonaka & Takeuchi, 1995 as cited by Kok, 2007). A study conducted in institutions of higher learning in the United Kingdom by Rowley (2000) found that IHLs are in the knowledge business since they are involved in the knowledge

creation, dissemination and learning process. It is important for institutions to know what they know and what kind of knowledge they lack as institutions inherently store, access, and deliver knowledge in some manner.

The question is: What value is added to the products and services they deliver through the effective use of that knowledge capital? Almost every institution refers to the capturing, sharing and delivery of knowledge from faculty to students. However, KM involves much more; it entails going beyond the inherent knowledge industry of IHLs. It involves the discovery and capture of knowledge, the filtering and arrangement of this knowledge, and the value derived from sharing and using this knowledge throughout the organisation. It is this organised complexity of collaborative work to share and use information across all aspects of an institution which marks the effective use of knowledge. Higher education institutions have significant opportunities to apply knowledge management practices to support every part of their mission (Kidwell *et al.*, 2000; Ramakrishnan & Yasin, 2012). They need to create and maintain knowledge repositories, improve access to and use of knowledge among staff; and to create learning and sharing environment to add value to knowledge and to treat it as an organisational asset. Thus, it is clear that KM will dominate the management agenda for decades as this ultimately determines the competitive performance of organisations.

KM Initiatives in Africa

A study conducted in South Africa by Maponya (2004) revealed that knowledge has impacted all institutions, particularly those of higher education, through their academic libraries. This has underscored the value of knowledge management. As a result, the role of academic libraries is changing to providing the competitive advantage for the parent institutions. Success of academic libraries depends on their ability to utilise information and knowledge of its staff to better serve the needs of the academic community. Consequently, whatever affects academic libraries has an impact on the entire institutions.

According to Kok (2007), the intellectual capital deals with particular reasonable knowledge and substantial fruits of mind. The institutions of higher learning endeavour to ensure that all the training is for competence. Such training would assist employees to attain the knowledge and skills they need to perform their tasks according to the required standards. In fact, various best practices can be used to reduce the cost and enhance performance, quality of service and decision-making.

Some institutions of higher learning in Africa have recognised knowledge as a beneficial asset, hence they are trying to implement various strategies to ensure that they cope with the existing demands for knowledge from their customers (competitors for students to improve their own services to remain competitive). Institutions such as ZOHRU University in Morocco have started to ensure that they manage right knowledge and get

the right people at the right time and make their decisions using the knowledge management system (Laoufi *et al.*, 2011). A survey by the National University of Singapore (NUS, 2007), which involved countries in Africa and Asia noted that knowledge management is recognised as central to information sharing between public sector agencies and between the public sector and the citizens they serve; some have KM programmes in place whereas others are working on them.

Initiatives in Tanzania

A study conducted in Tanzania and Uganda by Wanderage *et al.* (2011), investigated the effects of knowledge management practices on innovations, found that management development institutes (MDI) heavily depend on their staff's knowledge to ensure survival in today's highly competitive environment. This knowledge is a valuable asset in an intellectual environment. The study results confirmed a positive relationship between the process innovation and knowledge sharing. MDIs are likely to innovate more in terms of new process creation and improvement of the existing ones. Wanderage *et al.* (2011) recommended that, for MDIs to endure there is need to reinforce innovation through effective management of staff's knowledge by creating an environment of sharing and making knowledge as a key resource for innovation. Knowledge Management is an enabling tool and a vehicle which needs to be adopted by executives to cultivate the culture of its management.

Methodology

The research design involved a combination of qualitative and quantitative research approaches. Forty-four respondents comprising academic and non-academic staff were drawn from Mbeya University of Science and Technology. Primary data were collected using the questionnaire, face-to-face interviews, focus group discussions and observation whereas secondary data were collected through documentary review.

Presentation and Discussion of Research Findings

Demographic Characteristics of the Respondents

Twenty-nine (65.9%) respondents were males and 15 (34.1%) were females. This pattern of distribution could, perhaps, be attributed to Mbeya University of Science and Technology being a hard science-based institution. Traditionally, science subjects attract more males than females primarily because of gender-constructed roles and the dictates of patriarchy still prevalent in the Tanzanian communities.

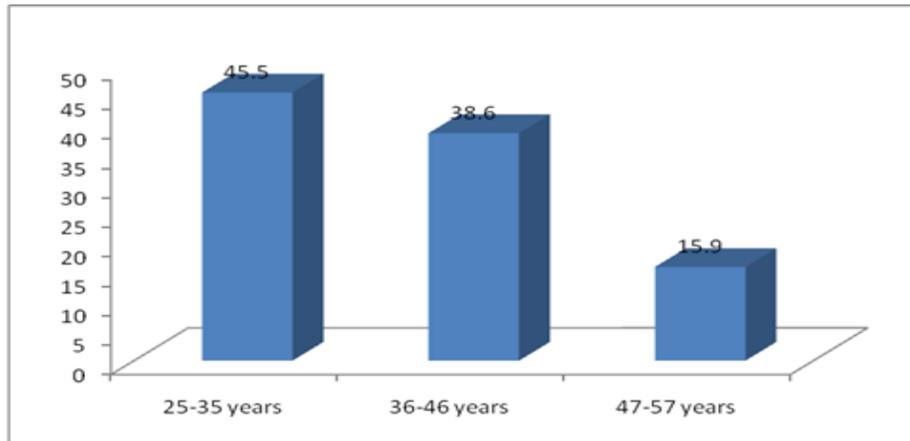


Figure 1: Distribution of the Respondents by Age (N= 44)

Source: Field Data (2012/13)

As Figure 1 illustrates, 20 (45.5%) respondents were aged between 25 and 35 years, 17(38.6 %) were aged between 36 and 46 years and seven (15.91%) were aged between 47 and 57years. Most of the respondents, therefore, were aged between 25 and 46 years, an age group which is expected to be adaptive to new technology and also flexible in new environment; moreover, people in this age range tend not to be technophobic. In fact, they are more likely to share their new knowledge and skills in their professional work than others. Furthermore, they are also at the stage of getting familiar with the norms and practices of MUST as they work towards the realisation of the institutional mission.

The majority (41- 93.2%) of the respondents as Table 1 demonstrates were degree holders. This qualification makes them better placed to manage and share knowledge within and outside the university community.

Table 1: Distribution of Respondents by Educational Level

	Levels of Education	Frequency	Percentage
N=44	Masters	20	45.5
	Bachelors	13	29.5
	PhD	8	18.2
	Diploma	3	6.8
	Total	44	100.0

Source: Field Data (2012/13)

Staff's Level of Awareness of Knowledge Management

The respondents were given various definitions of knowledge and were supposed to identify the proper definition from among the definitions outlined to determine whether they could define knowledge properly to verify their capacity to distinguish knowledge from information. Table 2 summarises the results:

Table 2: Respondents' Knowledge of Difference between Knowledge and Information

Response	Frequency	Percent
Yes	36	81.8
Don't know	4	9.1
Not sure	3	6.8
No	1	2.3
Total	44	100.0

Source: Field Data (2012/13)

The majority of the respondents, 36 (81.8%), indicated that they were aware of the distinction between knowledge and information (see Table 2 for details). This is the case despite, perhaps, their not being sure on whether knowledge can be shared and transferred between individuals finally into team knowledge within an institution and the community in general, as noted during interview when one respondent commented:- this information should come after Table 2.

“Knowledge is experience or an ability which is an inborn trait that can never be shared or transferred”

Table 3 shows that 27 (61.4%) of the respondents identified knowledge as skills and experiences, and five (11.4%) respondents (See Table 3 for details identified knowledge as know how whereas nine (20.5%) did not respond to the question, implying vagueness of the definition as also implied in interview session by one of the interviewees who defined it as *“inborn abilities which cannot be explained”*.

Table 3: Best Knowledge Definition (N=44)

Knowledge Definitions	Frequency	Percent
Skills and Experience	27	61.4
No response	9	20.5
Know how	5	11.4
Product of Human Experience	2	4.5
Data with meaning	1	2.3
Total	44	100

Source: Field Data (2012/13)

If people possess knowledge, it becomes an asset for them and can share it. Knowledge Management will then be useful in controlling the institution's expertise and know-how, hence adding value to the core functions of the institution. It is most likely that the substantial resources of the institution can no longer be considered sustainable sources of competitive advantage if such resources can become quickly available to competitors, thus providing more competition. Awareness of knowledge management among staff at institutions of higher learning should enable them to recognise the value of knowledge as an incredible asset. As Abu-Bakar and Alias (2005) explain, the central role of ideas in this process, unlike material assets, knowledge assets increase with use as ideas breed new ideas, and shared knowledge stays with the giver while enriching the receiver.

Awareness on Knowledge Management Activities at MUST

Twenty (45.5%) respondents were aware of knowledge management activities at MUST whereas 24 (54.5%) respondents indicated that they were not aware of KM activities at MUST. This indicates that more than 50 percent of the respondents were not aware of Knowledge Management activities at MUST.

Unawareness on knowledge management activities by more than 50 percent of the respondents could be explained by the fact that, although the university staff engage in knowledge management activities in their departments, there appears to be no top management support towards knowledge management activities/processes. On the other hand, the responses from the top management implies that there are agreed upon modalities on knowledge management activities at MUST. During an interview with top

management officials it was noted that staff thinking differed from that of the top management. The responses from the top management indicated that faculty were not keen on publishing. For example, one official said:

Academicians don't get involved in research and publication they have been in the same positions for almost ten years. No promotion.

The study established during observation that facilities were too adequate to help and facilitate knowledge management practices, as most of the technological tools for knowledge management such as Internet facilities and subscribed to professional databases were not working. Moreover, staff generally lacked on-the-job training, which could help them respond to real-time problems. There was also no formalised knowledge sharing mechanism. The management simply exerts more efforts and emphasis on teaching, one of the core responsibilities of the institution. This situation calls for ensuring the promotion of awareness and understanding of KM among staff. Management should invest in cultivating knowledge Management Practices and train/retrain staff to be proactive in dealing with real-time complex problems in addition to creating a conducive environment for knowledge sharing among staff.

One value of the knowledge management initiative among individual workers is an opportunity for them to learn in structured, corporate-sponsored seminars, formal university courses and structured group meetings. Real-life management includes the ability to retain in the organisation, prioritising in more efficient and effective knowledge worker education, increased competitiveness in the marketplace as well as improved profitability. As Madhar (2010) observes, successful knowledge management implementation requires senior management to understand the organisation's needs and have a clear vision of its future. Moreover, successful knowledge management implementation also requires an organisation to have a grasp of the range of technologies available for enabling the knowledge management process that applies to the organisation's business and the experience (Bergerson, 2003). In the case of MUST, it lacked or had inadequate prerequisite requirements for knowledge management, which is manifested in staff only being vaguely aware of knowledge management practices.

Involvement in Knowledge Management

The findings showed that 25 (56.8%) respondents had never been involved in knowledge management activities whereas 11 (25%) indicated that they were often involved in such activities and eight (18.2%) indicated that they seldom got involved in KM activities. One plausible explanation is that knowledge management practices were not fully integrated in the institutional management system. In consequence, MUST staff were generally not aware whether they got involved in knowledge management or not and

there was no agreed upon institutional wide mechanism for knowledge management and that staff were hardly aware of knowledge management practices at MUST.

Types of Knowledge Management Activities in which Respondents were Involved

The respondents were given a list of Knowledge Management activities from which to pick. As Table 4 illustrates, most of the respondents indicated that they did not get involved in knowledge management activities. Only six (13.4%) respondents indicated that they were involved in improvement of work (innovations), 10 (22.7%) indicated knowledge finding, 11 (25%) indicated creativity, 11 (25%) indicated involvement in research and publication and any related writings such as manuals, 12 (27.3%) indicated knowledge re-use, and 15 (34.1%) respondents indicated that they shared knowledge within their respective departments. This is due to the natural office setting which makes them move around from one office to another or because they worked in the same department, which provided them with an opportunity to communicate on a regular basis.

Table 4: Types of KM Activities Respondents were Involved in

	Activities	YES		NO	
		F	%	F	%
N=44	Involvement in doing improvement of work (innovation)	6	13.6	38	86.4
	Participation in knowledge finding	10	22.7	34	77.3
	Involvement in creativeness	11	25	33	75
	Research, publication and other writings	11	25	33	75
	Knowledge re-use (knowledge application)	12	27.3	32	72.7
	Sharing knowledge among staff within department	15	34.1	29	65.9

Source: Field Data (2012/13).

Existing Knowledge Management Practices at MUST

Seventeen (38.6%) respondents indicated that there were knowledge management practices in their departments, 14 (31.8%) respondents indicated 'No' whereas 13 (29.5%) respondents indicated uncertainty. The findings, therefore, show that only a few respondents indicated existence of knowledge management practices at MUST. The implication is that there were no formalised departmental knowledge management practices in place.

Knowledge Management Implementation Process

The respondents were also required to indicate the activities which are employed in managing the existing knowledge at MUST. From the responses detailed in Table 5, one notes that the processes are not well-integrated in the overall management system. For instance, in all the processes listed no single process scored even one-third of the affirmative responses. Only three (6.8%) respondents indicated the disposition of knowledge that is not needed anymore, five (11.4%) indicated knowledge preservation to guarantee its availability, nine (20.5%) indicated fostering the use and application of knowledge, 11 (25%) indicated maintaining and controlling the quality of knowledge, 11 (25%) indicated developing knowledge inside the organisation, 12 (27.3%) mentioned knowledge identification, 12 (27.3%) cited ensuring knowledge application and uses, 14 (31.8%) indicated acquiring knowledge from external sources, whereas 14 (31.8%) indicated knowledge sharing. The study findings indicated that the processes for use in knowledge management implementation at MUST neither get priority nor are they fully utilised. This implies that a lot more is required in getting knowledge well managed as an institutional asset.

In fact, for an institution to survive there is need to heighten innovation through effective management of staff's knowledge by creating an environment of sharing and making knowledge a key resource for innovation. Institution's top management also needs to cultivate the culture of knowledge sharing and searching because knowledge management is an enabling tool and vehicle which needs to be adapted and implemented (Wanderage, Lwanga, & Muhenda, 2011). The resultant employees' knowledge from participating in knowledge management process is institutionalised as organisational knowledge, which has substantial potential that enables a competitive advantage. Knowledge management further allows collaboration, knowledge sharing, and continual learning in addition to encouraging organisations to acquire, change and use efficiently knowledge application to solve problems and come up with creative and innovative solutions (du Plessis, 2007).

As Maponya (2004) contends, the success of academic libraries depends on their ability to utilise information and knowledge of its staff to better serve the needs of the academic community. The conventional function of academic libraries is to collect,

process, disseminate, store and utilise information to provide service to the university community. Hence, academic librarians play a crucial role in knowledge management. Academic libraries, as part of the university and its organisational culture, do impact on universities, positively when everything is geared towards obtaining the desired outcomes. Presently the role of academic libraries is changing to that of facilitating the acquisition of a competitive advantage by the parent or host university.

Table 5: Process for Knowledge Management Implementation

	Process for Knowledge Management Implementation	YES		NO	
		Freq	%	Freq	%
N=44	Disposition of Knowledge which is not needed any more	3	6.8	41	93.2
	Knowledge preservation to guarantee its availability	5	11.4	39	88.6
	Foster the use and application of knowledge	9	20.5	35	79.5
	Maintain and control the quality of knowledge	11	25	33	75
	Developing knowledge inside the organization	11	25	33	75
	Knowledge identification	12	27.3	32	72.7
	Ensure knowledge application and uses	12	27.3	32	72.7
	Acquiring knowledge from external sources	14	31.8	30	68.2
	Sharing and distributing Knowledge & ensuring its availability	14	31.8	30	68.2

Source: Field Data (2012/13)

Conclusion

In general, Knowledge Management (KM) practices at MUST needs immediate attention in terms of addressing the weaknesses for the institution to reap the tangible fruits of KM. The study noted that, although the respondents considered team knowledge valuable, they did not treat team knowledge as a crucial dimension which actually needs to have its own organisation so as to sit. On the one hand, it is true that

MUST had inadequate facilities and developments in technologies; one the other hand, mobile phones, for instance, were so readily available that they could have been used for the purpose. In fact, even with the few facilities, the top management can provide a supportive environment and commitment to put in place infrastructure for managing the knowledge formally and making the practice an integral part of the organisational culture.

Recommendations

To boost awareness of KM, management staff at institutions of higher learning should have well-established hard and soft KM infrastructure and ensure the effective promotion of KM practices among staff. As such, there was a need for more investment in cultivating knowledge management practices and in training/retraining of staff to react to real-time complex problems. As the study found that staff at MUST perceive knowledge management practices as an important practice to ensure that knowledge is treated as an intellectual asset in an institution as well as in knowledge society, top management in institutions of higher learning should put in place both soft and hard structures to support knowledge management. Institutions of higher learning should also take initiatives at ensuring that there are knowledge management practices in place.

REFERENCES

- Abu-Bakar, A. Z., & Alias, R. A. (2005). Knowledge management implementations in Malaysian public institution of higher education. *Proceedings of the Postgraduate Annual Research Seminar*, (pp. 47-51). Malaysia. <https://core.ac.uk/download/pdf/11779696.pdf> (Retrieved 10/11/2012)
- AL-Hakim, L., Ahmad, N., Hassan, S., & Abdul, O. Y. (2012). Critical success factors of knowledge management, innovation and organisation performance: An empirical study of the Iraqi mobile telecommunication sector. *British Journal of Economics, Finance and Management Sciences*, 4, 31-49.
- Basu, B., & Sengupta, K. (2007). Assessing success factors of knowledge management initiatives of academic institutions – A Case of an Indian Business School. *Electronic Journal of Knowledge Management*, 5 (3), 273 – 282.
- Bergerson, B. P. (2003). *Essential of Knowledge management*. New Jersey, Canada: John Wiley & Sons Inc.
- Bhusry, M., & Ranjan, J. (2011). Implementing knowledge management in higher education institution in India: A conceptual framework. *International Journal of Computer Application*, 29 (1), 34-46.
- Business Dictionary (2013). Knowledge management: Definition. <http://www.businessdictionary.com/definition/knowledge-management.html>, (Accessed 10th January 2013).
- du Plessis, M. (2007). The role of knowledge management in innovation. *Journal of Knowledge Management*, 20-29. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.454.588&rep=rep1&type=pdf> (Accessed 10th January 2017).
- Frappaolo, C. (2006). *Knowledge management*. West Sussex: Capstone Publishing Ltd.
- Frost, A. (2012). Summary: Knowledge management best practices, *KMT, An Educational KM Site*, <http://www.knowledge-management-tools.net/KM-best-practices.html>
- Gamble, P. R. & Blackwell, J. (2001). *Knowledge management: A state of the art guide*. London: Kogan Page Publishers.
- Kidwell, J. J., Linde, K. M. V., & Johnson, S. L. (2000). Applying corporate knowledge management practices in higher education, *Educause Quarterly*, 2:28-

- 33.<https://www.educause.edu/ir/library/pdf/EQM0044.pdf> (Accessed 10th January 2016).
- Kok, A. (2007). Intellectual capital management as part of knowledge management initiatives at institutions of higher learning. *Electronic Journal of Knowledge Management* 5(2),181–192.www.ejkm.com (Accessed 10th January 2016).
- Laoufi, A., Mouhim, S. Megder, E. Cherkaoui, C., & Mammass, D. (2011). Using knowledge management in higher education: Research challenges and opportunities: *Journal of Theoretical and Applied Information Technology*, 31 (2), 100-108.
- Madhar, Mohamed Abdul, Knowledge Management in Higher Educational Institutions with Special Reference to College of Applied Sciences (CAS), Ministry of Higher Education, Sultanate of Oman (August 23, 2010). Available at SSRN: <https://ssrn.com/abstract=1663543>. (Accessed 10th April, 2017).
- Mahdinezhad M., Bijandi M. S., Pourrajab M., and Nazari K. (2011). Knowledge Management: A Process for Social Capital in Higher Education. Paper presented at the International Conference Human Resource Development (ICHRD2011), Johor Bahru Malaysia. 22 -23 June 2011.
- Maponya, P. M. (2004). *Knowledge management practices in academic libraries*. South Africa: University of KwaZulu-Natal, Pietermaritzburg.
- Mavodza, J. & Ngulube, P. (2012). Knowledge management practices at an institution of higher learning. *SA Journal of Information Management* 14(1), Art. #496, 8 pages. <http://dx.doi.org/10.4102/sajim.v14i1.496> (Retrieved 10/11/2012)
- NHS National Library for Health (2005): *ABC of knowledge management*. http://www.fao.org/fileadmin/user_upload/knowledge/docs/ABC_of_KM.pdf. (Accessed 10th April, 2017).
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge creating company: How Japanese companies create the dynamics of innovations*, New York: Oxford University.
- Nonaka, I., & Takeuchi, N. (2001). *Knowledge emergence*. New York: Oxford University Press.
- du Plessis, M. (2007). The role of knowledge management in innovation. *Journal of Knowledge Management*, 11 (4), 20-29. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.454.588&rep=rep1&type=pdf>. (Accessed 10th April 2017).

- Ramakrishnan, K., & Yasin, N. M. (2012). Knowledge management system and higher education institutions. *International Conference on Information and Network Technology (IPCSIT)* 37, 67-71.
- Rowley, J. (2000). Is Higher Education Ready for Knowledge Management? *International Journal of Education Management*, 14 (7), 325-333.
- Scorta, J. (2009). A knowledge management practice investigation in Romanian software development organizations. *Wseas Transactions Computers*, 2 (8), 459-468. <http://www.wseas.us/e-library/transactions/computers/2009/28-921.pdf>. (Accessed 10th April 2017).
- Sulisworo, D. (2012). Enabling ICT and knowledge management to enhance competitiveness of higher education institutions. *International Journal of Education*, 4(1), 112-121.
- Wanderage, A. S., Lwanga, E. K., & Muhenda, M. B. (2011). Use of knowledge management practices by management development institutes for promoting public administration: Lessons from Uganda and Tanzania. *Journal of Public Sector Management*, 2-13.