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Theoretical article

Knowledge Management in Higher Education: Challenges and Opportunities

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Abstract

Pursuing success has necessitated a shift from considering knowledge to considering both knowledge and knowledge management potential. Different institutions, including higher education, are working hard to possess new KM strategies and processes. This stems from their managers' belief that an effective KM policy would enable different stakeholders to function actively and work collaboratively in order to achieve the institution's intended objectives. Yet, the implementation of KM at higher education faces many challenges most of which are related to a lack of technological competence and the unwillingness of many individuals to share and disseminate their knowledge with their peers due especially to competition and lack of recognition. This descriptive study sheds light on knowledge management in the context of higher education. It discusses the opportunities as well as the problems related to the implementation of this latter. It seeks to answer especially three main questions: How important is KM in higher education? What are the organizational resources that control KM? What are the challenges that would hinder an effective KM in higher education? This study ends with a set of strategies that would enable an effective implementation of knowledge management in higher education.

Keywords:
challenges, higher education, knowledge management, opportunities, strategies

1. Introduction

A well-known premise of the current age states that knowledge is power. As a matter of fact, mankind has always pursued power being authoritative (land, money, etc.) or allocative (technology, science, etc.) (Allan, 2007). The shift from concentrating on one and/ or the other is always determined by the demands imposed by some given context. Now, being found in a digital era where technology controls the world at all levels, having knowledge has become more important than having a nuclear weapon simply because knowledge is the driving and monitoring force that directs and controls all other ones being material, cognitive, educational, technological, cyber, etc. In sum, knowledge helps you make right decisions on the right time. In this way, you gain time and effort, and you also reach all your aims including controlling the world.

However, possessing knowledge is not enough in itself. That is, in order to get everything under control, one should also show another very important talent that is knowledge management (KM). In fact, it is 'knowing' along with 'managing what you know' that helps powerful nations remain powerful and makes it difficult for weak ones to get an equal status. Knowledge is an important preliminary factor for all fields including that of education. In fact, we would not be exaggerating if we state that higher education is the most important of all fields where knowledge starts, flourishes, develops, and generates. Higher education is the link between a nation and its powerful status (Golowko, 2021). In other words, if a nation wants to achieve a good ranking in any field, it should give much importance to higher education because it is there where scientists, politicians, teachers, sociologists, psychologists, educationalists, professionals, etc. are made. That is, universities house a significant portion of a nation's most scarce and valuable human capital which "is valuable because it is essential to the development of the high technology and technoscience necessary for competing successfully in the global economy" (Slaughter & Leslie, 1997, p. 10).

Being aware of the importance of developing a knowledge force as well as a managing one, higher education has initiated new fields meant to seek new trends within KM. Although the starting point was business sector, KM has necessarily found its way to integrate within higher education curriculum for the aforementioned reasons. Yet, being a new area of focus and a one that is highly linked to a non-stoppable technological wave, addressing KM in higher education should be given much importance. This descriptive study aims at answering a set of questions including:

- How important is KM in higher education?

- What are the organizational resources that control KM?
- What are the challenges that would hinder an effective KM in higher education?

2. Three types of knowledge

Before tackling knowledge management, we should first deal with knowledge which is defined as

> ideas, judgments, talents, root causes, relationships, perspectives and concepts. Knowledge is stored in the individual brain or encoded in organizational processes, documents, products, services, facilities and systems. Knowledge is action, focused innovation, pooled expertise, special relationships and alliances. (Gupta & Sharma, 2004, p. 4)

Another way to define the term knowledge can take place by referring to its three types: explicit, implicit, and tacit knowledge.

2.1. Explicit knowledge

Wang (2012) states that explicit knowledge comprises knowledge that has already been expressed or documented through texts, tables, diagrams, illustrations, photographs, audio recordings, videos, and similar formats. In relation to KM, this type of knowledge is the one that can be codified and communicated in databases, employee handbooks, HR (human resources) policies, etc.

2.2. Tacit knowledge

Gupta & Sharma (2004) state that tacit knowledge is in people's minds. That is, it is Knowledge that individuals possess but are unable to articulate or convey explicitly through language, as any attempt to do so would fail to capture its full essence (Nickols, 2003, as cited in Wang, 2012). This includes for instance ways of dealing with other people, analyzing others' reactions or facial expressions, ability to respond quickly to unexpected situations, etc. Wang (2012) adds that tacit knowledge can be understood in terms of four aspects: intuitive, embodied, spiritual, and affective. By reference to KM, tacit knowledge can for instance refer to the skills and expertise of certain employees that are difficult to explain or share with their colleagues.

2.3. Implicit knowledge

Implicit knowledge is very similar to tacit knowledge except that this former can be easily articulated and codified. In an institutional context, implicit knowledge refers to knowledge that is embedded yet currently unarticulated. In other words, implicit knowledge takes place when individuals may be capable of articulating and expressing their knowledge, yet choose not to do so due to specific factors such as behavioral norms, cultural influences, or organizational dynamics in certain contexts (Wang, 2012).

3. Knowledge management: Capture, store and share knowledge

Davenport (1994) defines knowledge management as "the process of capturing, distributing, and effectively using knowledge" (p. 119). That is, KM is understood within three main functions which are: capturing, storing, as well as sharing knowledge. That is, KM section within each institution, being educational or not, should consider this tripartite structure where a neglect of one element would certainly affect the functioning of the two other ones. KM is never about knowledge usage alone, it is also about exchanging what we know with those inside and outside our institution. It is in this way that we can guarantee a certain development and updating of knowledge and knowledge resources.

In relation to higher education institutions, Zyngier (2021) states that there are two main areas of focus regarding KM: pedagogical as well as administrative tasks. She explains that while the first requires stakeholders such as teachers, students, researchers, etc. to carry out multiple, interconnected processes related to scholarly research and teaching, administrative tasks refer to a less visible category of knowledge management and includes: student enrollment, retention, graduation, and career placement; program and institutional governance; fundraising and handling of grants; management of facilities; engagement with alumni; and coordination of international collaborations, among other duties.

4. Knowledge management: People, processes and technology

Although knowledge and knowledge management are usually understood as being directly linked to technology, it is important to mention that there are other resources to consider as well. That is, in order to function effectively, knowledge management should make use of three main organizational resources: people, processes, and technologies so as to be able to use and share knowledge more effectively. Knowledge management (KM) strategies and practices reflect the interplay among people, processes, and technology, all of which operate as essential components within the

evolving dynamics of organizations striving to fulfill their information needs (Petrides & Nguyen, 2006).

4.1. People

'People' resource refers to the sum of stakeholders who are directly or indirectly engaged in knowledge management. This encompasses: faculty, students, administrators, staff, regulatory bodies, industry partners, and the broader community in which the academic institution operates (Zyngier, 2021). These stakeholders are an important human capital because it is individuals—not systems or technology—who possess knowledge, they are the ones who shape the policies, set the priorities, and manage the processes that enable the effective use of data, information, and knowledge (Petrides & Nguyen, 2006).

4.2. Processes

This refers to both self-evident and embedded day-to-day practices that take place in a given institution including higher education. This includes for instance decision-making practices that greatly affect access to and control of knowledge especially if this authority is exercised at the most upper level only. Petrides and Nguyen (2006) explain that these kinds of decision-making processes Such decision-making processes can hinder a sense of ownership, as individuals may lack the necessary incentives to make independent decisions or initiate changes—let alone engage with data or share information. In a word, one way to ensure a good implementation of knowledge management in higher education or any other institution is to check whether everyday practices guarantee access to and share of knowledge among the different stakeholders. Yet, as these former are assigned different positions, we expect knowledge to be managed in a way that respects the system hierarchy, security and ownership.

4.3. Technology

As already stated, it is a wrong assumption to refer to technology as the main resource that is necessary to manage knowledge-related practices and suggest solutions to KM issues. In fact, technology is important yet not sufficient in itself. That is, technology and information systems are neither the sole drivers of information sharing nor merely peripheral to it; rather, they play an equally vital role by influencing how information circulates within an organization (Petrides & Nguyen, 2006). In other words, Km depends on people and technology to manage and adjust knowledge and knowledge-related processes where the three of them, i.e., people, technology and processes "come together to promote a robust system of information sharing, while guiding organizations toward ongoing reflexivity and learning" (Petrides & Nguyen, 2006, p. 25).

5. The importance of knowledge management in higher education

As stated above, knowledge management is crucial for the development and continuity of any domain especially that of higher education. Higher education central position vis-à-vis other domains has necessitated, perhaps more than in any other domain, a permanent updating of KM strategies and processes. Needless to say, it is higher education that supplies the other sectors with the first human as well as knowledge capitals. Other reasons why higher education stakeholders should assign great importance to KM (Jones-Esan et al., 2022; Metcalfe, 2006) include:

- KM helps educational institutes effectively capture, organize, and share knowledge among stakeholders.
- It promotes innovation and continuous improvement.
- It enhances decision-making processes
- It fosters a culture of learning and collaboration.
- It allows stakeholders to access available knowledge resources.
- It endorses efficiency in administrative tasks.
- It facilitates the teaching process and ameliorates student-teacher interaction.
- It improves overall learning outcomes for students.
- It allows easy access to knowledge resources.
- It promotes an atmosphere that gives value to knowledge and helps treat knowledgeable stakeholders, being administrators, teachers, students, etc. as an important asset.
- It permits to settle systems that protect intellectual property and secure personal data.

It plays a dynamic role in ensuring the successful functioning of any higher education institution by efficiently planning, organizing, monitoring, and coordinating its intellectual capital assets—thereby boosting overall institutional performance (Jones-Esan et al., 2022).

6. Implementing knowledge management in higher education: Five stages

As already stated, knowledge management had its origin in the sector of business where managing knowledge is a crucial strategy that seeks to accelerate productivity, address losses, guarantee maximum profit, etc. However, as knowledge of different sorts is fundamental for all fields, it becomes important to manage this latter in order to get the established goals. Higher education is not an exception. Thus, KM has found its way to the educational setting and draws on models proposed in the economic sector to realize its own project which is an educational one. Gupta and Sharma (2004) for instance has suggested five-stage model where each stage represents an important cycle in MK process:

6.1. Identification of the knowledge base

The first stage within any KM model is determining the knowledge content of the project i.e., identifying the specific knowledge needed for a given situation (Gupta & Sharma, 2004). This includes gathering information about:

- *Project management:* This includes gathering information about the inputs, outputs, timing, deadlines, the objectives of each stage, timing, deadlines, risks, costs, etc.
- *The team:* This refers to knowledge regarding team members' roles, individual attributes, the position of key informants, and overall team dynamics (Gupta & Sharma, 2004). A considerable part of this knowledge is tacit i.e., stored in team members' heads.
- *Product/solution:* In relation to business sector, Gupta and Sharma (2004) state that this refers to information about "technical requirements, applications, end users, performance in the marketplace, objectives of the project, and so on" (p. 160). Making projection for the educational setting, we can refer to an educational project where the aim is to spread and share knowledge of different sorts, a great part of which is the raw material of projects in other sectors. In sum, whether it is an educational setting or a non-educational one, there is always a product to construct, an objective to attain, and an issue to fix. All this type of knowledge can be recorded and retrieved.
- *The companies:* This refers to general knowledge about the companies of the same sort or chasing the same product. This includes: knowledge about organizational structure, strategic direction, mission and goals, established routines, formal rules and norms, informal networks, key information gatekeepers, as well as the underlying culture and internal politics (Gupta & Sharma, 2004).
- *External environment:* At a larger scale, knowledge about the external environment is also important because one cannot win if he does not have enough information about the competitors as well as the supply demand dynamics. This knowledge is about characteristics of the market and end customers, emerging market trends, competitors, comparable products or solutions, regulatory constraints, suppliers, past or potential partners, and other relevant stakeholders (Gupta & Sharma, 2004).

6.2. Knowledge creation and capture

This stage aims at identifying or producing the necessary information and insights to execute the project (Gupta & Sharma, 2004). The necessary knowledge can be generated through various methods, such as assessment tools, best practices inside the institution, lessons learned from other projects, hands-on experience, etc. Having a scratch about what is required to start a given project is very important in order to address the discrepancy between existing knowledge and the knowledge that is required.

6.3. Knowledge storage and retrieval

This stage refers to stocking up and recovering the information needed at different stages of project realization. As mentioned earlier, there are three different sorts of knowledge: Explicit, implicit and tacit knowledge. These types can be restored as follows:

- *Documentware:* This refers to reports, procedures, guidelines, and models that include information about procedural, technological and financial requirements for a given project.
- *Humanware:* This part of knowledge refers to knowledge that is stored in team members' heads. This includes: insights gained from the project (e.g., information-gathering routines at the start), mistakes made (e.g., ineffective practices), procedural knowledge (e.g., who to approach for specific e-Learning inquiries), and intuition (e.g., an instinct for potential issues in similar projects) (Gupta & Sharma, 2004).
- *Hardware:* This knowledge refers to Intranet and Internet platforms, project management software, internal databases, and teleconferencing, videoconferencing, and online meetings, along with presentations and iterative prototypes used to visually

communicate the project's progress (Gupta & Sharma, 2004).

- *Groupware:* Each project is contextualized within a collectivity that affects its overall philosophy. Higher education attributes, executive sectors, as well as the cultural identity of the customer are among the elements that shape and form the groupware which resides in the shared knowledge of groups, as well as in organizational structures and routines (Gupta & Sharma, 2004).

So while documentware and hardware refer to a tangible knowledge that can be easily replicated, revised, evaluated, copied, and imitated, knowledge contained in humanware and groupware is difficult to code and record because much of it is tacit knowledge. Yet, it is thanks to this knowledge i.e., humanware and groupware that a given project has its distinctive and proprietary in nature, making it exceptionally hard to replicate or imitate (Gupta & Sharma, 2004).

6.4. Knowledge sharing and dissemination

This stage refers to processes that connect individual knowledge to group and organizational knowledge (Gupta & Sharma, 2004). In other words, knowledge is generated through sharing and dissemination processes that occur among individuals within a social context. Gupta and Sharma (2004) add that this stage is more accurately characterized as a continuous process, rather than a stage with distinct starting and ending points.

6.5. Knowledge application, trading, and exploitation

The final goal of KM is to use that knowledge in favor of the institution. In other words, all decisions taken within KM process are meant to improve intra- and inter- institutional activities (Gupta & Sharma, 2004) in order to attain the established objectives.

At last, it is important to know that these stages are not sequential ones. In other words, they are better understood as continuous inter-dependent sub-processes within KM process. For that,

- These stages are not mutually exclusive.
- There is much interdependence between them.

The starting and ending point of each one of them is neither fixed nor clearly apparent. Knowledge sharing and dissemination, for example, is a mechanism that occurs whenever individuals communicate. Similarly, storage and retrieval are ongoing processes throughout the duration of a project (Gupta & Sharma, 2004).

7. Barriers to knowledge management in higher education

Although knowledge management is incredibly valuable for higher education, its implementation is not that easy due to many barriers (Dyson, 2004; Makambe, 2014; Petrides & Nguyen, 2006) including:

7.1. Individual barriers

These barriers are related to different individual members in a given educational setting:

- Lack of awareness of the importance of managing and sharing knowledge among colleagues and stakeholders.
- Fear of sharing personal data because of a lack of security and intellectual property protection.
- Some people do not like to share what they know.
- Difficulty to meet with other colleagues due to having different work timetables and living in different areas.
- Dominance of explicit knowledge over tacit knowledge which is stored in individuals' minds.
- Absence of collaboration and desire to work as team members which would help evaluate current situations in terms of success, failure, and lacks, and set plans for the future.
- Individuals are different in terms of competencies, experience, and commitment.
- Lack of dialogue between the different stakeholders.
- Absence of recognition from managers and colleagues.
- Lack of trust among the different stakeholders especially those who compete to get the same promotion.
- Absence of trust in the accuracy and reliability of knowledge of an unfamiliar source.
- Individuals with different linguistic, national and/or ethnic backgrounds may find it difficult to communicate or set a social network with each other.

7.2. Organisational and knowledge-related barriers

These barriers are related to the organization or the institution itself as well as the type of knowledge in question. These include:

- The integration of KM policy into the company's major goals is not prioritized and if done, it is not discussed openly.
- Failure to clearly communicate the benefits and value of knowledge management practices.
- Lack of integrating KM within day-to-day practices.
- Lack of specialized spaces to share, discuss, reflect upon, and generate KM practices.
- Lack of recognition practices that would encourage individuals to share their knowledge.
- Adopting a culture where having highly skilled and experienced staff is not considered a top priority.
- Lack of suitable infrastructure and resources to support knowledge management.
- Monopolizing knowledge by a minority group; the one with power positions.
- The rigid hierarchy that hinders sharing power; hence, sharing knowledge.
- Internal competitiveness within organizational units.
- Lack of an evaluation of past experience with KM.
- Difficulty to convert tacit knowledge into explicit one where any sudden absence of a key individual would likely result in that knowledge becoming inaccessible (Gupta & Sharma).

7.3. Technology barriers

These are technology-related barriers which include:

- Insufficient integration of information technology systems into everyday practices.
- Lack of technical support and immediate maintenance of integrated technological systems.
- Lack of up-to-date technical and technological experience.
- Lack of familiarity and experience with technology.
- Dissimilar technological experience among stakeholders.
- Lack of training which would enable stakeholders to handle new technological devices, programs, and applications.
- Sometimes, it is hard to find the right technology that suits the institution's KM strategy.

Passive consumption of technology, especially AI tools.

8. Strategies for efficient knowledge management in higher education

In spite of the existence of aforementioned barriers, higher education institutions can still implement KM effectively if the following strategies (Metcalfe, 2006; Petrides & Nguyen, 2006; Rainer & Prince, 2021) are taken into account:

- *A meaningful education:* As it is first and foremost related to equipping students with different knowledges and skills meant to be invested in real-life situations, education should be meaningful in terms of addressing day-to-day social, political, professional, etc. encounters.
- *Consider technology:* Living in a digital era, one cannot but adjust and respond to the ever-changing digital demands in different fields, and education is not an exception. That is, as stated above, technology can be used as a source of knowledge as well as a means that facilitates knowledge management thanks to the different devices, programs and applications.
- *Handle security and privacy issues:* In order to protect sensitive and personal data, managers can restrict roles and permissions i.e., making sure the system can only be accessed by authorized members of the institution. This can also be done by using a mutlifactor authentication system which requires more than one type of authentication like voice recognition, fingerprint, iris scanners, etc., and increases security and data protection (Rainer & Prince, 2021).
- *Informed decision-making:* Another important aspect that should be regarded in KM is engaging all stakeholders, with different jurisdictions, in policy making, especially the learner being the main target of higher education system. This entails uncovering the processes that control knowledge spread, use and accessibility, and knowledge gap (Metcalfe, 2006). This takes place as by revealing patterns of information use that might otherwise go unnoticed, knowledge management practices foster organizational reflexivity, enabling organizations to gain a deeper understanding of themselves and make more informed decisions (Petrides & Nguyen, 2006).
- *Implant a culture of inquiry and reflexivity:* This culture aims at acknowledging the importance of research programs and services that enhance student

access to knowledge and contribute to their success in and outside classroom context. This culture also helps in creating mechanisms for sustainable, long-term organizational learning (Petrides & Nguyen, 2006).

- *The use of information maps and audits:* KM policy requires an initial diagnosis that helps obtain a general view of the strengths and weaknesses of the existing practices.

- *Long-term KM strategies:* KM is a continuous process that requires regular checks to assess knowledge resources and make changes to improve their performance. Hence, KM should be better set within long-term, organization-wide strategies.

- *Identifying information shortages and needs:* This refers to finding out where stakeholders and the intended audience need more data and information.

- *Addressing students' access and success:* KM practices should better help to support institutional capabilities and resources towards addressing students' access to knowledge and success in acquiring that and other knowledges.

- *Stay up-to-date with new advancements:* This refers to being up-to-date with new KM strategies.

- *Set quantifiable objectives:* In order to implement KM effectively, stakeholders should also set a list of quantifiable objectives that can be measured.

- *Create an environment that rewards collaboration:* A successful way to convince individuals to share their knowledge is to reward them and recognize their work.

- *Encourage teamwork and collaboration:* Teamwork and collaboration have many benefits. Yet, many employees refuse to share their knowledge and expertise perhaps due to competition or any other reason. Now, to change this mentality, managers can reward those who collaborate with their colleagues. They can also plan for a training program that educates the different stakeholders on the importance of collaboration and sharing knowledge.

- *Identify the best tools:* There are many knowledge management platforms that one can skim to choose the KM policy that responds best to his actual and future requirements. One can do that by taking advantage of free trials to test the software and check whether it has all the features one needs for his Knowledge Management program. Different factors will affect this choice including: how successful it is elsewhere, its applicability, the established objectives, security requirements, the budget, collaboration option, etc.

- *Create a knowledge management team:* In order to respond to KM requirements, it is necessary to form a task team that handles, checks, and evaluates KM processes. This team can also create physical and/or digital spaces to share knowledge and collaborate among them and with others about the best effective KM policy.

- *Consider tacit knowledge:* As mentioned above, one of the elements that assign uniqueness to a given institution is the tacit knowledge its human capital has. As such, it becomes important to retrieve, share, and exploit this knowledge to serve the institution's objectives. This can take place via observation, discussion, and experience.

9. Conclusions

Like any other institutional system, higher education is pursuing success at all levels. Part of this journey necessitates possessing knowledge of different sorts, including the digital one that should respond and adjust to the non-stoppable dynamicity of the digital world. Along knowledge, higher education stakeholders should also master knowledge management that requires being up-to-date with the new KM strategies and processes. Working on both areas i.e., knowledge and knowledge management is a challenging task. It requires collaboration from individuals inside and outside the institution. It also requires working on a triangle of: people, processes, and technology. Yet, as the human capital is the motor force of the whole operation, it becomes crucial to educate individuals on the importance of KM in the overall success of the institution. These individuals should understand that knowledge and knowledge management are the real power of their institution. As such, they need to work on themselves in order to possess both skills. They also have to understand that success is never an individual achievement. It is the result of collaboration among all stakeholders, each according to his specialty. It is only in this way that higher education or any other institution can realize its intended objectives and achieve a high ranking position.

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