

# Prevalence of Knowledge Management Processes in Higher Education Institutions: A Systematic Literature Review

**Nephas Mufutumari**

Women's University in Africa, Zimbabwe  
mcnephy@gmail.com

**Frederick Kohun**

Institution Robert Morris University, USA  
fkohun@gmail.com

**Dušan Lesjak**

International School for Social and Business Studies, Slovenia  
dusan.lesjak@guest.arnes.si

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## Abstract

*The purpose of this paper is to help provide a better understanding of knowledge management (KM) processes in higher education institutions (HEIs). The study employs a systematic literature review (SLR) of papers published in peer-reviewed journals from 2019 to date. The SLR uses four steps: search, appraisal, synthesis, and analysis. During the search, a search string, journals, and the types of databases are defined. Pre-defined literature inclusion and exclusion, as well as quality assessment criteria, are carried out in the appraisal stage. Data extraction and categorisation are done in the synthesis stage. Finally, a narration of the result and conclusion is carried out in the analysis phase. The systematic review concludes that KM process terminology has a low prevalence in the literature on KM in HEIs. This study helps in KM strategic planning and implementation in HEIs by articulating the prevalence of KM process terminology in HEIs KPA.*

**Keywords:** knowledge management, higher education institutions, KM process, HEI business processes, HEI KPAs

## **INTRODUCTION**

Higher Education Institutions (HEIs) are in the business of creating, sharing, transforming, and storing knowledge for informed decisions and innovation through various processes. The traditional functions of an HEI may be classified into teaching and learning, research and community engagement, innovation, and business development. The business of HEIs is a complex mix of activities carried out by people following procedures using some technology in a highly regulated environment. The complex business environment requires HEIs to continuously improve their “capability to locate, organise and exploit relevant data, information, and knowledge to rich greater productivity and longevity” (Carlucci, Kudryavtsev, & Bratianu, 2022 pg. 795). Continuous improvement of HEI products and processes requires clear articulation of the knowledge value chain.

### **Aim and purpose**

This work aims to identify the prevalence of the KM processes in the HEI Key Performance Areas (KPA). The purpose is to provide a better understanding of KM processes in the HEI sector by profiling existing literature.

### **Objectives**

The objective of the study is to carry out a systematic review of peer-reviewed articles on knowledge management in higher education to clarify prevalent KM processes in HEIs

### **Motivation**

This study helps in identifying entry points for KM strategic planning and implementation in HEIs by articulating the prevalence of KM process terminology in HEIs KPA. This may be used in developing appropriate KM strategies and programs to enhance institutional performance.

## **LITERATURE REVIEW**

### **Knowledge Management**

Processes and infrastructure that enable institutions to discover, select, scatter, arrange, and move significant information and skills, for example, critical thinking, dynamic learning, and key arranging, may be termed knowledge management (KM) (Khanal & Mathur, 2020). KM may be considered a purposeful integration of humans, processes, and technology to develop, capture, and execute an organization’s creative infrastructure (Galgotia & Lakshmi, 2022). KM is focused on managing the working environment to foster the creation, sharing, and application of valuable Knowledge to enhance organizational capabilities (Migdadi, 2021). According to (Rahman Ahmad et al., 2020), adoption of KM in organisations is inspired by the necessity to reveal intellectual potential. The International Standard Organisation’s ISO 30401 defines KM as a “holistic, cross-functional discipline and set of practices, focused on knowledge, that improves organizational performance”.

### **KM Processes**

KM processes refer to the ways that an organization handles knowledge at the various stages of its life in the organization. Defining how all aspects of knowledge processes are applied and embedded within

the business activities helps to define ways in which the main objectives of the KM strategy will be achieved. According to ISO-30401-2018 (ISO, 2018), KM processes include but are not limited to acquisition (Kac), application (Kap), retention (Krt), curation (Kcu), interaction (Kin), representation (Kre), combination (Kco), learning and internalization (Kii).

### **KM in HEIs**

Knowledge is core to the HEI business. Adoption of KM may help HEIs to improve their “capability to acquire and share knowledge, applying it to problem resolution, and promoting research, continuous development, and partnerships” (Galgotia & Lakshmi, 2022, pg. 1). According to (Rahman Ahmad et al., 2020) adoption of KM in HEIs is inspired by the necessity to reveal the intellectual potential in the key performance areas (KPA) of HEIs. Traditional KPAs of HEIs are Teaching and Learning, Research, and Community Service. Some additional KPAs include HEI Administration, Innovation, and Business Development, depending on the jurisdiction. KM implementations in HEIs have been modelled along private sector implementations without any real understanding of KM concepts and benefits and focusing only on the use of IT to implement and support KM (Veer-Ramjeawon & Rowley, 2020). The uniqueness of HEIs and their business requires clear articulation of HEI business processes into KM process models.

### **METHODOLOGY**

The study uses a systematic literature review (SLR) methodology. According to Feak & Swales, 2009, p. 3 an SLR is undertaken to clarify the state of existing research and identify gaps and areas for further research. According to (Mengist et al., 2020):

“SLR is a process that allows us to collect relevant evidence on the given topic that fits the pre-specified eligibility criteria and to have an answer for the formulated research questions. Meta-analysis needs the use of statistical methods that can be descriptive and/or inferential to summarizing data from several studies on the specific topic of interest. The techniques help to generate knowledge from multiple studies, both in qualitative and quantitative ways. The usual method has four basic steps: search (define searching string and types of databases), appraisal (pre-defined literature inclusion and exclusion, and quality assessment criteria), synthesis (extract and categorized the data), and analysis (narrate the result and finally reach into conclusion) (SALSA).”

The SLR's four basic steps of search, appraisal, synthesis, and analysis were employed in the study as follows:

#### **Step 1: Search**

During the search, the types of databases, journals, a search string, and journals were defined.

##### *Databases*

The research used databases available on EBSCOhost and Google Scholar platforms.

## *Journals*

The initial search settings for journals and articles were for peer-reviewed articles from any journals, articles, and books in English.

## *Search Phrase*

The initial search phrase (ISP) had the following keywords: Knowledge management in higher education and could contain any of the following terms: Knowledge Management Process, Knowledge Acquisition, Knowledge Application, Knowledge Retention, Knowledge Curation, Knowledge Interaction, Knowledge Representation, Knowledge Combination, Knowledge, Internalisation and learning, Knowledge transfer, Knowledge Sharing, Knowledge Creation, Knowledge Storage, Knowledge Utilization. The searches were set to return articles from 2019 to date.

## **Step 2: Appraisal**

During the appraisal step, pre-defined literature inclusion and exclusion and quality assessment criteria are employed to refine the search criteria and improve the quality of the search findings. In the appraisal, the search was repeated but only returned articles with downloadable articles in either PDF or HTML. The keyword list was uploaded into a database and refined using the query:

```
SELECT [id] ,[keyword] ,[occurrences],[total_link_strength]
FROM [dbo].[extended_keywords_list] where keyword like '%knowledge%' or keyword like '%Knowledge%'
or keyword like '%university%' or keyword like '%college%' or keyword like '%learning%'
```

## **Step 3: Synthesis**

In the synthesis phase, the data are extracted and categorized. The returned articles were downloaded as RIS files, PDF, and HTML files.

## **Step 4: Analysis**

During the analysis step, the extracted and categorized articles were analysed to produce the findings. The final results were then analysed and used to conclude. Bibliometric analysis tools were selected to trace the literature on knowledge management in higher education. Bibliometric analysis can be defined as the application of mathematical methods to analyse content (Mengist et al., 2020). The analysis tools chosen were <https://www.vosviewer.com> and <https://elicit.com>. The desktop version of <https://www.vosviewer.com> was used, while the online version of <https://elicit.com> was used. Composite RIS files were downloaded from the <https://www.zotero.org> database and uploaded into the <https://www.vosviewer.com> desktop application. Figure 3 below shows the article collection in the Zotero Database. The PDF files were uploaded to the analysis platform: <https://elicit.com>. The HTML files were analysed with simple text searches.

## RESULTS

### Search Results and Appraisal

The initial search with ISP yielded 450 articles across 259 journals. The appraisal process produced a list of keywords.

### VosViewer Visualisations

The 450 articles with the keywords which were uploaded to VOSviewer produced the visualisations below:

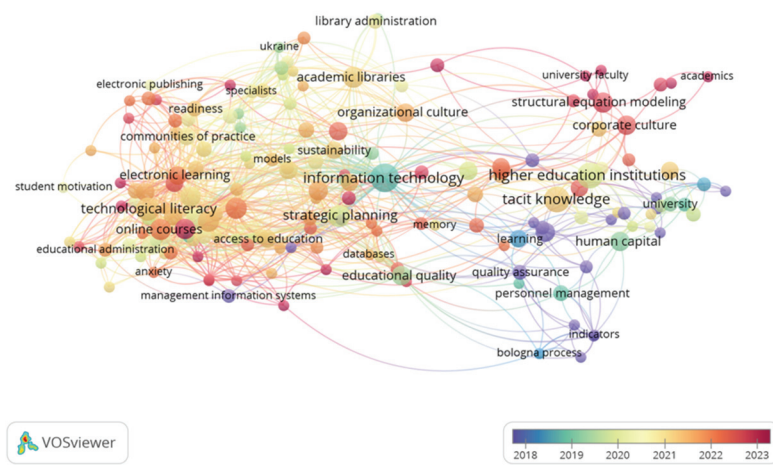


Figure 1: Overlay visualisation of keywords

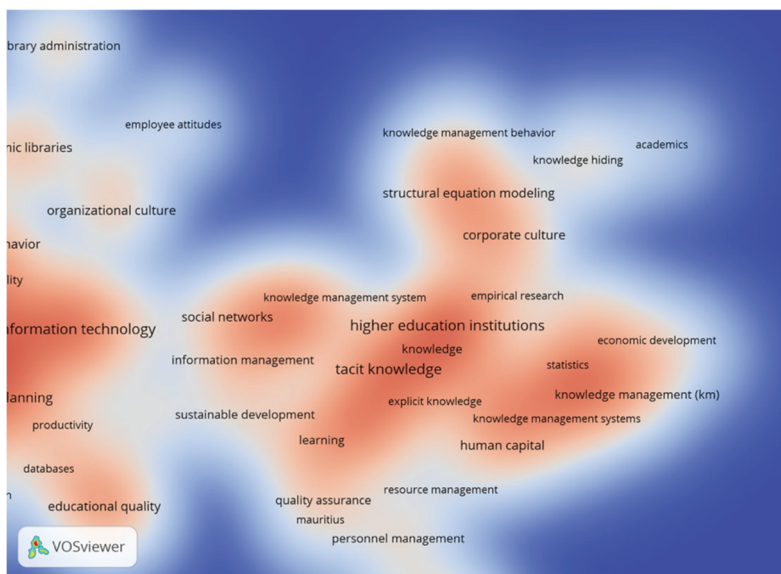


Figure 2: Cluster density visualisation of keywords

Table 1: Prevalence of KM terms in PDF files uploaded to <https://elicit.com> for analysis

Item	Count	%Count
Articles: Key Word(s) & year>2018 & Education	48	53.9%
Articles Excluded	41	46.1%
Total PDF Files Uploaded	89	100%

Table 2: Prevalence of KM processes

Prevalence	K Process	K Acquisition	K Application	K Retention	K Curation	K Interaction	K Representation	K Combination	K Internationalisation	K transfer	K Sharing	K Creation	K Storage	K Utilization	K Discovery
Total	15	8	3	1	0	0	0	0	0	6	7	5	3	3	1
% of set		53.33	20	6.67	0	0	0	0	0	40	46.67	33.33	20	20	6.67
%total		8.99	3.37	1.12	0	0	0	0	0	6.74	7.87	5.62	3.37	3.37	1.12

## DISCUSSION

The analysis using the Artificial Intelligence platform <https://elicit.com> gives a gross prevalence of 53.9%. This figure is a compound collation of all instances of the KM processes terminology in the text uploaded, including the bibliography of the papers and a count of the occurrence of at least one of the KM process terms. The platform was unable to produce disaggregated analysis. It is suspected that the specification overloaded the platform, so it could not produce the expected results.

The visualisations show that the prevalence of KM Process terminology in the literature on KM in HEI is very low. This is consistent with the keyword counts and the text search analysis. The text search analysis shows that only 15 papers out of the 89 had at least one of the KM process terms. The most prevalent KM process terms in order of magnitude of prevalence are knowledge acquisition (8.99%), knowledge sharing (7.87%), knowledge transfer (6.74%), and knowledge creation (5.62%). There was no mention of knowledge curation, knowledge interaction, knowledge representation, knowledge combination, and knowledge learning and internationalisation.

## CONCLUSION

It is widely recognised that HEIs play a crucial role in the knowledge value chain. The study has established that there is interest in KM in HEIs. However, the KM process terminology has not yet fully integrated with HEI processes. Therefore, a KM process framework is needed to be in tune with the evolving HEI business landscape.

## RECOMMENDATIONS

To take advantage of the evolving tools for analysis, more work needs to be done. Perhaps rerun the <https://elicit.com> tool with improved data and apply the new column specifications one at a time to allow for processing. It is also recommended to rerun the VOSviewer visualisation with full-text extracts rather than bibliography data only. It is also recommended to link the HEI KPA activities to the KM processes and analyse the results to develop a model for HEI performance measurement.

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