

Evaluating a knowledge management implementation method in a network of private schools in Brazil

Jader Henz, Pontifícia Universidade Católica do Rio Grande do Sul, Brazil,
jaderhenz@gmail.com, <https://orcid.org/0000-0002-6228-7532>

Mírian Oliveira, Pontifícia Universidade Católica do Rio Grande do Sul and ISEG Research,
ISEG Instituto Superior de Economia e Gestão, Universidade de Lisboa, Brazil/Portugal,
miriano@pucrs.br, <https://orcid.org/0000-0002-5498-0329>

Abstract

In the context of education, the implementation of Knowledge Management (KM) aims to enhance outcomes. This article seeks to propose and evaluate a method for implementing KM in private basic education schools. The method employed in this research was based on the stages of KM implementation and the KM practices already in use in private schools. A qualitative approach was adopted, utilizing semi-structured interviews, as well as a focus group. This article proposes a method for implementing KM that has been assessed by technical and administrative professionals from basic education institutions, thereby advancing the discussion of KM in the educational context. The proposed and evaluated method, titled Knowledge Management in Education (KMEDU), comprises five stages: diagnosis, design, implementation, improvement, and evaluation. Each stage includes defined objectives, activities, and implementation mechanisms. Additionally, an appendix for each objective provides specific elements to support the implementation of the method in schools. The article offers school managers a peer-assessed tool designed to manage technical and administrative knowledge, with the goal of improving outcomes.

Keywords: Implementation, knowledge management, basic education, schools, Knowledge Management in Education (KMEDU).

Introduction

Knowledge Management (KM) processes and structures within organizations contribute to improved performance, competitive positioning (Bindra et al., 2020), operational quality, and innovation outcomes (Alharbi & Aloud, 2024). KM facilitates the deployment of both existing and new knowledge to address challenges, develop solutions, and adapt to evolving scenarios (McAdam, 2000). As such, KM is a critical component for organizations aiming to enhance team skills, boost productivity, and foster the growth of individual employees.

KM is not a new field of practice, yet organizations continue to face challenges in its implementation (Liebowitz & Paliszkievicz, 2019). This issue is also evident in the education sector, and few studies that explore KM in this sector were found (e.g., Asad et al., 2022). Addressing this gap requires changes, and Tan (2023) outlined key steps for educational institutions, including raising awareness among leaders and staff, fostering a culture of trust and

knowledge sharing (KS) supported by rewards, and creating an environment equipped with the necessary people and infrastructure. Given education's critical role in developing 21st-century skills—such as problem-solving, collaboration, and information management (Isaías et al., 2021)—evaluating KM implementation models or frameworks can benefit organizations in this sector.

KM in basic education requires further research (Asad et al., 2022), particularly studies assessed by the technical and administrative staff of educational institutions to determine their feasibility and applicability. This study aims to address the question of whether the proposed method of implementing KM effectively meets the administrative and pedagogical needs of private basic education institutions in Brazil. In Brazil, the term 'basic education' refers to the education for pupils from 4 to 17 years of age. Some private schools in Brazil are members of the religious orders, with schools in Brazil and Europe.

This article aims to develop and evaluate a method for implementing KM in private basic education schools in Brazil. The proposed method, called Knowledge Management in Education (KMEDU), is based on the framework by Henz and Oliveira (2024b), incorporating the stages of KM implementation and existing KM practices within educational institutions. As an academic contribution, the study presents a method assessed by professionals from the technical and administrative staff of basic education institutions. The managerial contribution lies in providing school principals with a peer-assessed tool designed to manage technical and administrative knowledge, ultimately aiming to achieve improved outcomes.

In addition to this introduction, this article is organized into four sections. The second section provides a literature review on the stages of KM implementation. The third section outlines the research methodology employed in the study. The fourth section presents the analysis and discussion of the results. Finally, the fifth section addresses the conclusion, along with the study's limitations and suggestions for future research.

Literature Review

The literature offers various frameworks and models proposing different approaches to implementing KM in organizations (Henz & Oliveira, 2024a). Oliveira et al. (2012) explored the challenges associated with KM implementation in 11 companies in Portugal through qualitative research involving senior management. Their findings identified four key dimensions to guide the mapping of challenges: knowledge content, internal context, external context, and organizational processes. However, these structures are often tailored to specific sectors, leaving a gap in alternatives adapted to areas such as education (Alarcon & Spanhol, 2015). Concerning education, several frameworks address KM implementation, however they focus on higher education (Hakiman et al., 2019; Martinez & López, 2019; Younas et al., 2022).

In the context of basic education, Chu (2016) examined the influence of the leadership provided by principals during the initial stages of KM implementation and the subsequent KM processes within schools. The author highlights the critical role of knowledge leadership in facilitating KS and fostering a culture of trust and collaboration. Similarly, Fullan (2002) emphasized the importance of KM in schools and the pivotal role of principals in promoting KM. However, he

does not provide practical guidelines for principals to become effective knowledge leaders. Instead, Fullan identifies five essential capabilities for school leaders in relation to KM: defining moral purpose, understanding the change process, building relationships, managing knowledge, and creating coherence (Fullan, 2002).

Henz and Oliveira (2024a), in a systematic review of the literature on KM implementation, identified five stages for implementing KM in organizations: diagnosis, design, implementation, improvement, and evaluation. In the study, no organization is specific to basic education; however, the implementation stages seem similar across different sectors of activity. Building on these stages, this study proposes a method for implementing KM in basic education schools.

Stage 1: Diagnosis

The first stage, consisting of diagnosis, focuses on understanding the conditions required for implementing KM and preparing the organization for its adoption. Salzano et al. (2016) emphasized identifying critical issues, understanding challenges and risks, and evaluating KM behavior within the organization. Akhavan et al. (2014) highlighted the importance of aligning KM initiatives with organizational strategy by verifying KM policies. Similarly, Gunawan et al. (2019) recommended assessing existing infrastructure and ensuring alignment between KM and business strategies as initial steps. Additionally, Daghfous and Kah (2006) stressed the need to mobilize teams, define KM objectives, and determine infrastructure readiness.

Stage 2: Design

In the second stage, the project design is developed. This requires senior management to recognize the importance of KM within the organization (Gunawan et al., 2019) and to foster an organizational culture that values the benefits of implementing KM (Salzano et al., 2016). Gunawan et al. (2019) emphasized the importance of designing the KM system, which includes planning for an efficient IT infrastructure and robust communication systems, as highlighted by Akhavan et al. (2014).

Stage 3: Implementation

The third stage focuses on implementing KM by training personnel through educational and corporate KM programs (Akhavan et al., 2014), defining methods for utilizing knowledge and storing it effectively. This stage involves identifying strategies for capturing, classifying, sharing, and reusing knowledge (Carneiro et al., 2017).

Stage 4: Improving Implementation

The fourth, improvement stage, focuses on addressing flaws, developing new strategies, and enhancing KM processes. Akhavan et al. (2014) emphasizes the importance of thorough documentation during this stage.

Stage 5: Evaluation

The final stage focuses on evaluating KM implementation, engaging various stakeholders, including senior management, coordinators, and users. Salzano et al. (2016) recommended assessing KM behavior within the organization and comparing outcomes.

The Method of Implementing KM in Basic Education

In this research, a proposal for implementing KM in basic education schools is outlined (Appendix R). The proposal considers the five stages presented by Henz and Oliveira (2024a). Nevertheless, this study details the activities within each stage and the tools necessary for their execution. The KMEDU was built on the five implementation stages, and it is presented in Appendix R (first version) and in Section 5 (following its evaluation).

Research Method

The research strategy adopted in this study is qualitative, aimed at developing and evaluating a method for implementing KM in basic education schools in Brazil. This study employed a deductive, qualitative research approach using a multiple case study and a focus group made up of experts. The selected cases involved schools from a traditional network of private educational establishments. The Focus Group was utilized to capture participants' insights on the research topic and can be employed independently or alongside other methods (Oliveira & Freitas, 1998). A cross-sectional design was chosen as the time horizon, with data collected at a single point in time. Interviews with school managers, coordinators, and teachers served as the observation unit, while the KM processes in basic education schools constitute the unit of analysis.

The implementation method developed is detailed in Section 5. To ensure its relevance to the field of basic education, the method underwent face evaluation by experts who analyzed it and provided feedback on elements such as the nomenclature used. Five experts were involved in the evaluation process. During the evaluation, the experts suggested several modifications, including adapting the nomenclature to align with the educational field, reorganizing the sequence of each stage, and revising certain execution mechanisms. These changes have been incorporated into the final version of the method.

Data collection involved school managers (principals and coordinators), as key decision-makers, and teachers, who play a central role in KS within schools. Qualitative data were gathered through semi-structured interviews conducted from June to July 2024. The interview protocol provides details about the researcher, research objectives, and data usage, and ensures the confidentiality and security of the information provided.

The semi-structured interviews were conducted online with schools from a traditional network of private educational establishments in Brazil. The network was selected based on the following criteria: the researcher's convenience, the network's long-standing tradition in education, and its operation across all three segments of basic education, i.e., early childhood education, elementary education, and high school. According to Dubé and Paré (2003), interviews are the most commonly used data collection technique in case studies.

Prior to the interviews, participants were contacted to provide details about the study, including the research objectives, the intended use of the data, and assurances of confidentiality and data security. Subsequently, participants received a communication thanking them for their willingness

to participate and outlining the research protocol. The semi-structured interview guide included the developed implementation method and a questionnaire related to the presented method.

After obtaining consent and scheduling the interviews, they were conducted via Microsoft Teams and recorded for later transcription. A total of eight individuals participated, comprising six women and two men. The interviews lasted an average of 45 minutes. To ensure anonymity and streamline the text, participants are referred to by coded identifiers, avoiding any direct reference to individuals or their associated institutions. Table 1 below provides a characterization of the interviewees to support the analyses presented.

Table 1. Interviewee Characterization

Interviewee	Code	Sex	Position	Education	Time at Institution	School
Interviewee 1	Int. 1	Female	Pedagogical Coordinator	Post-graduate	2 years	Sch. A
Interviewee 2	Int. 2	Female	Management Coordinator	Post-graduate	3 years	Sch. A
Interviewee 3	Int. 3	Male	Teacher	Post-graduate	15 years	Sch. A
Interviewee 4	Int. 4	Female	School Principal	Master's in Education	28 years	Sch. B
Interviewee 5	Int. 5	Female	Pedagogical Coordinator	Post-graduate	8 years	Sch. A
Interviewee 6	Int. 6	Female	Educational Supervisor	Master's in Education	35 years	Sch. B
Interviewee 7	Int. 7	Male	School Principal	Master's in Education	2 years	Sch. A
Interviewee 8	Int. 8	Female	Teacher	Post-graduate	3 years	Sch. B

The two schools included in the study are part of a traditional educational network with a global presence spanning over 300 years and approximately 120 years in Brazil. School A, established 116 years ago, has about 600 students and employs approximately 100 administrative and educational staff, making it a small institution within the network. In contrast, School B, founded 96 years ago, has around 1,500 students and 190 staff members, classifying it as a large school within the network.

The Focus Group included five participants: three men and two women, comprising both KM and education experts. The group was introduced to the KM implementation method and went on to discuss each step of each stage and make pertinent suggestions. The method was subsequently revised to incorporate the feedback provided. Below, Table 2 presents the characterization of the participants to support the analyses conducted.

Table 2. Characterization of the Focus Group participant

Participant	Code	Sex	Education
Participant 1	Part. 1	Female	Master's in Administration
Participant 2	Part. 2	Male	Master's in Education
Participant 3	Part. 3	Male	PhD in Administration.
Participant 4	Part. 4	Male	Master's in Administration.
Participant 5	Part. 5	Female	PhD in Administration.

The final version of the method is presented in the results discussion section. The recorded interviews were transcribed using the Word Office 365 text editor for subsequent analysis. According to Dubé and Paré (2003), providing a clear description of the data analysis procedures helps ensure a better understanding of the results and demonstrates that the process was both systematic and rigorous. The data analysis method employed was Gibbs' Content Analysis (2007),

which consists of three phases: pre-analysis, exploration of the material, and treatment and interpretation of the results. After transcription, the interviews were coded and analyzed using a text editor. First, based on the dimensions presented in the research instrument, codes were defined to organize the analysis (Gibbs, 2007). In total, five codes were created to organize the interview content.

Analysis and Discussion of the Results

Analysis of the Data

The semi-structured interview script included questions designed to guide the interviews, with the primary objective of presenting and discussing the developed implementation method for private basic education institutions. The analysis focused on the issues addressed in each of the five stages: diagnosis, design, implementation, improvement, and evaluation.

Analysis of School 'A' Interviews

Management methods based on KM principles can lead to improvements in teaching quality, resulting in higher academic performance. This takes into account both internal and external school performance indicators, as well as enhancements in management and administrative processes that foster increased student recruitment and retention, leading to better financial outcomes (Machado et al., 2020). Such processes enable schools to promote and enhance KS, apply knowledge effectively, and encourage creativity and innovation (Machado et al., 2020). This perspective is clearly reflected in the remarks of Int. 7, the Principal of School A, who stated: *"In the diagnosis stage, by identifying KM objectives for the school, it is essential to consider improvements in both pedagogical and administrative processes, as they complement and are directly related to each other."*

Organizational culture is considered a critical factor in any successful implementation, as it significantly influences KM processes and outcomes. A strong organizational culture enables and motivates individuals to adopt, create, share, and disseminate knowledge for the collective benefit of the organization (King, 2009). Interviewees 1, 2, and 5 expressed concerns regarding the institutional culture at their respective schools. Int. 5 noted, *"The school culture needs to be addressed to facilitate knowledge sharing, as some teachers believe that knowledge is power."* This statement highlights the view that organizational culture can be a decisive factor in ensuring the effective implementation of KM.

The role of KM in improving academic results is also highlighted by Int.1, a Pedagogical Coordinator, who links higher academic performance to the presence of a culture of KS, stating *"[...] there is a culture of knowledge sharing. Teachers with extensive experience in a specific area can help those who may struggle in the same field. This exchange of knowledge can bridge these two worlds."* Cheng (2014) notes the lack of the habit of fostering collaborative work between teachers and students, as well as in utilizing and reusing information by observing and sharing activities developed by other teachers, which limits the opportunities for sharing experiences. In light of these challenges, Bock et al. (2005) suggest that it is wise for schools to first cultivate an organizational learning culture before institutionalizing knowledge-sharing mechanisms.

All interviewees, including the principal, coordinator, and teacher, recognize the relevance of the KM implementation method and its potential for schools. According to Int. 1, *“the method is complex and requires careful planning for its implementation”*. Two key factors stand out: time and funds. These factors are interconnected, as successful implementation requires allocating time for planning and execution, which involves compensating the school employees engaged in the process. Int. 5 highlights the importance of increasing training for team members to ensure effective implementation. As they explained, *“Technical training alone is not sufficient; the organization, especially the team involved, needs to understand the change, be receptive to it, and be prepared to share knowledge.”*

Intra-organizational communication is a key aspect of the KM implementation method. Technology can serve as a powerful tool in managing and distributing necessary information, and depending on the method, such information should be disseminated by the management to the entire educational community. In the context of KM, communication plays a crucial role in facilitating organizational activities (Pepulim et al., 2013), as it is inherent in all processes and supports not only learning and the dissemination of organizational culture but also the creation and sharing of knowledge. While KM models are often viewed as vital for organizational success, communication is sometimes overlooked in traditional methodologies and theoretical references. However, incorporating communication and communication processes into KM models can enhance their effectiveness and organizational strategies (Pizzaia et al., 2018). Int. 2 emphasizes communication as a critical factor: *“The entire school needs to be aware of what is happening; otherwise, the project won’t achieve the expected effectiveness. Clear and constant communication from management will help disseminate the project and its results.”*

The third stage of the method, known as implementation, is critical as it involves changes in the organization of teams within the pilot sector and other affected areas. In this stage, Int. 7 highlights a barrier known as *“resistance to change.”* According to the interviewee, this resistance is more noticeable in the administrative sector, compared to the pedagogical sector. *“Administrative employees may be accustomed to certain ways of working and may hesitate to adopt new practices or tools. Change can be perceived as a threat, leading to insecurity and resistance.”* To overcome this challenge, one effective strategy is to clearly communicate the benefits of KM and involve all levels of the organization in the change process (Luccas & Damian, 2022).

Evaluating KM requires the consideration of intangible assets. However, there is no universal tool that can objectively translate these intangible resources. Interviewees 1, 2, and 7 recognize the importance of evaluation but also highlight its difficulty. *“It is essential that there are clear indicators and parameters in the method so that the evaluation is not subjective, but presents concrete points,”* notes Int. 2. Antunes (2000) emphasized the importance of managers being able to identify and measure hidden assets in order to effectively manage their continuity and provide more accurate, realistic information.

Analysis of School ‘B’ Interviews

The necessity of conducting a KM diagnosis in the institution is emphasized by all the interviewees. Interviewees 4 and 6 note that some KM practices are already in place at their schools, although they are not explicitly identified as such. *“At the school, we have teacher and student monitoring systems, planning meetings, sharing of good practices, seminars, and other*

events that, I believe, can be considered Knowledge Management,” remarks Int 4. Henz and Oliveira (2024b) discuss KM practices involving tacit and explicit knowledge already present in basic education schools, across both pedagogical and administrative areas. However, the maturity level of KM implementation varies in the institutions. Int 8, a teacher, highlights the importance of clearly defining the school’s objectives for KM, suggesting *“care must be taken not to overload teachers with more work, considering all the responsibilities they already have in the classroom.”* According to da Silva Neto and La Falce (2024), there is a positive relationship between KM maturity and innovative capacity.

Institutional culture is often cited as a critical factor influencing the implementation of KM in organizations (Braquehais et al., 2017). In educational institutions, a culture characterized by bureaucracy and hierarchical rigidity can hinder KS. Ints 4 and 6 highlight a division between the pedagogical and administrative sectors in the school, where one sector often fails to recognize the relevance of the other and the necessity for both to collaborate toward common goals. Int 4 illustrates this issue, stating, *“The school secretarial service is administrative, but it needs to have a direct interface with the pedagogical service to fulfill its responsibilities and deliverables effectively.”*

Interviewee 8 underscores the significance of team mobilization, particularly among teachers. In schools, educators from different segments (Early Childhood Education, Early Years, Final Years, and High School) possess distinct technical backgrounds and teaching methodologies, which is not seen as inherently problematic. In fact, they represent a wealth of effective practices and successful projects that yield excellent learning outcomes for students, which could be shared across segments. During the implementation stage, Int 4 emphasizes the need for inclusive team mobilization, stating, *“It is important that when considering KM for pedagogy, teachers from all four educational segments are involved, as they offer diverse perspectives on knowledge shaped by their unique work experiences and training.”*

Communication plays a pivotal role in KM implementation by reducing misunderstandings between teams, sectors, and the organization as a whole (Piazza et al., 2018). Interviewees 4, 6, and 8 highlight the effectiveness of communication through formal channels such as email, WhatsApp groups, and other tools to keep school employees informed about KM initiatives. Additionally, Int 6 points out the value of informal communication in fostering engagement: *“If the working group tasked with KM implementation communicates well—even in casual settings like the teachers’ staff room during breaks—these moments can become opportunities for meaningful dialogue and collaboration.”*

During discussions about the implementation stage, the interviewees emphasized that the method is designed to 'initiate implementation', which typically involves organizing a launch event. Int. 6 sees it as pertinent to hold a celebratory event to mark the beginning of a new phase for the school. Conversely, Int. 4 highlighted the importance of incorporating other elements, such as targeted training for employees in the pilot sector, as there will be changes that need to be clearly communicated and understood by all those involved.

The interviewees at School B see feedback and evaluation as complementary processes, emphasizing that fostering a culture of feedback aims to enhance and refine outcomes while encouraging the exchange of ideas and experiences. Evaluation, in turn, serves to determine

whether the defined indicators are effectively capturing the anticipated results (Goldoni & Oliveira, 2010). Int. 4 observed that *“it is difficult to evaluate shared knowledge”* aligning with Goldoni and Oliveira’s (2010) assertion that assessing and measuring KM practices present challenges, as knowledge is an intangible asset that is inherently difficult to quantify.

The Focus Group

At this stage of the research, building on the literature review and insights gathered from the conducted semi-structured interviews, the objective was to examine the perceptions of KM, regarding the proposed method for implementing KM in private basic education schools.

The KM implementation method, including an explanation of each stage, its objectives, activities, and execution mechanisms, was presented to the participants. Following the presentation, a discussion of the method took place, encompassing methodological and conceptual debates as well as suggestions for improvements. Consistent with the objectives of this research, five categories were subsequently established for data analysis and discussion of the results: 1. Diagnosis; 2. Design; 3. Implementation; 4. Improvement; and 5. Evaluation.

The discussion of the first stage, the Diagnosis, began with Int. 3 seeking to understand the origin of the stages. Henz and Oliveira (2024a) outlined five stages as structured roadmaps for implementing KM in organizations. This model was adapted for basic education, forming the implementation method proposed in this article. A reorganization of the objectives in Stage 1 was suggested by Int. 1, who remarked, *“I understand there is a need to mobilize the team before identifying the KM objectives for the school.”* This suggestion considers the sequence of events in the Diagnosis stage, advocating for team mobilization prior to discussions about objectives. Other participants found this proposition timely and relevant. Regarding execution mechanisms, the involvement of a sponsor or representative from the school’s management was deemed essential by Ints. 1, 3, and 4. Int. 3 emphasized, *“The organization’s top management needs to be present, buying into the idea and validating what is proposed.”* The support of top management is considered critical in the KM implementation process (Oliveira et al., 2012). The organizational structure holds significant relevance, as it strongly influences decision-making on other factors, such as defining administrative strategies and the pedagogical proposal.

The identification of critical issues was emphasized as a key factor by Ints. 2 and 5, as such issues can pose obstacles to implementation. Organizational culture plays a decisive role in driving changes and improvements within an organization. Elements of this culture, including managerial and administrative decision-making processes, communication systems, enculturation, and visible artifacts, can either facilitate or hinder KM implementation (Reis, 2007).

In the second stage, Design, discussions centered on the importance of strategically selecting the pilot sector for the design and subsequent implementation of KM. Int. 2 emphasized that *“the key to choosing the pilot sector is to define key individuals who will be essential and provide honest feedback on whether KM is enhancing knowledge sharing or simply adding more work for them.”* Focus group participants stressed the importance of establishing assertive, periodic, and clear communication systems as a critical factor for successful implementation. The necessity for this communication to originate from school management was also underscored. Pizzaia et al. (2018)

argue that failing to explicitly address communication aspects within KM implementation models impedes effective KS and utilization within an organization.

In the third stage, Implementation, the model outlines a single objective that specifically addresses the implementation of the prototype developed during the design phase. However, the Focus Group highlighted several important processes that should be anticipated at this stage. Int 4 pointed out that *“implementing KM involves changes in the routines and processes of employees, and they need to be trained.”* This insight revealed the need to incorporate objectives and mechanisms that prioritize the training of individuals and teams. In addition, the focus group emphasized the importance of monitoring results based on established indicators. This monitoring could be facilitated through meetings and ongoing dialogues with employees in the pilot sector.

In the fourth stage, Improvement, the objectives and mechanisms were deemed appropriate by Ints. 1, 2, 3, 4, and 5, as they recognize that adjustments to the design can be made based on the feedback received, enabling later expansion to other sectors. For Int 4, improvement will be facilitated through continuous monitoring: *“It needs to be constant, with necessary changes implemented swiftly, as this will accelerate knowledge sharing.”* Feedback from the employees involved serves as a valuable tool for rapid monitoring, enabling quick and effective actions.

In the fifth stage, Evaluation, the Focus Group discussed the necessity of having KM indicators for more effective evaluation. Indicators serve as parameters that represent KM processes, allowing them to be quantified. Int. 2 pointed out that basic education lacks indicators that provide both qualitative and quantitative metrics for administrative and pedagogical processes. The implementation of KM will facilitate the establishment and monitoring of the outcome. The collection and documentation of lessons learned was also emphasized by Int. 5. Guzzo and Marcondes (2022) outline four key steps in a model for systematizing lessons learned in project management: identification and collection, selection, storage and retrieval, and finally, promotion and use. Furthermore, the same authors argue that it is crucial that the use of lessons learned is preceded by a thorough analysis of the context in which they were generated. This precaution ensures that past failures do not hinder innovation within organizations (Guzzo & Marcondes, 2022).

Discussion of the Results

Accordingly, the analysis in the previous section highlighted key discussions emerging from the interviewees' statements and their connections to the existing literature. The presentation of the KM implementation method for private basic education schools to the managers, coordinators, and teachers, as well as the Focus Group, revealed its alignment with the realities faced in these institutions. KM is a crucial component for basic education organizations. This importance was reflected in the interviewees' recognition of the need for an implementation method that could serve as a guide, adaptable to each school's specific context and circumstances. Cheng et al. (2017) underscore the critical role of leadership in the KM implementation process within educational settings, highlighting not only the involvement of senior school management but also the pivotal contributions of teachers. This underscores the centrality of people in driving KM implementation in educational settings.

In the semi-structured interviews, particular attention was given to the first and second stages, focusing on diagnosis and design. The primary observations emphasized the importance of team mobilization and the need to cultivate an institutional culture that recognizes the significance of KM for the school and encourages KS. Binotto et al. (2013) highlighted that sharing knowledge, experiences, and information is equally as vital as the ability to apply what has been consolidated in practice to generate tangible results. Regarding team mobilization, concerns arise about identifying the stakeholders who need to be involved in the planning process. While many collaborators should be engaged, some may exhibit disinterest or resistance to the topic. Additionally, there are external stakeholders such as educational consultants, textbook publishers, and administrative suppliers. The Focus Group underscored the necessity of team mobilization as the initial step in the method, advocating that achieving broad adherence requires all school employees to receive some form of training on KM, which could take the form of lectures, workshops, or other presentation strategies.

The interviewees' statements highlight the prevailing perception of KM within the school environment, which tends to reflect an instrumental perspective rather than a more strategic and integrative view of processes. The proposed implementation method seeks to address this issue by aligning objectives with the organization's overall strategy to improve outcomes. Examples of such objectives include: improving academic performance, focusing on enhancing students' academic results; optimizing administrative performance, aimed at achieving better financial and operational outcomes; retaining talent by reducing employee turnover; fostering student loyalty and attracting new enrolments to increase the institution's student base; innovating teaching methodologies to develop and implement more effective teaching and learning approaches; and strengthening organizational culture to achieve better results in organizational environment assessments. These objectives are designed to integrate various facets of KM into a cohesive strategy that benefits both the educational and administrative domains of the institution.

The Implementation stage originally aimed to execute the design developed for the selected pilot sector. However, based on insights from the interviews and Focus Group discussions, additional needs were identified to ensure effective implementation. A key requirement is the training of personnel in the pilot sector who will be directly involved. Since changes in procedures and the adoption of new technologies are expected, equipping staff with the necessary skills and knowledge is crucial. Furthermore, the Focus Group emphasized the importance of monitoring results throughout the implementation process. To facilitate this, the use of key performance indicators (KPIs) aligned with the ultimate objectives of the proposed strategy is recommended (Dipura & Soediantono, 2022).

The Improvement stage focuses on evaluating the implementation strategy and determining its continuation or necessary adjustments within the school. Feedback from the teams involved provides valuable insights into the project's impact on individuals and the pilot sector. This stage anticipates increased KS and initial positive trends in the selected indicators. The qualitative interviews and their subsequent analysis will yield results that inform future strategies and highlight areas requiring modification. Based on these findings, updated designs will be developed, and the method will be expanded to other sectors of the school. Finally, the Evaluation stage was deemed appropriate by the interviewees and the Focus Group, with no modifications required; its original proposition was maintained and evaluated.

Based on the observations from the interviewees and the Focus Group, the method was evaluated with some adjustments made to facilitate its implementation. Consequently, the implementation method outlined in Table 3 reflects the changes suggested during the evaluation process. The Appendices provided have also been evaluated in alignment with the principles of this model.

Table 3. Knowledge Management in Education (KMEDU)

Stage	Stage objectives	Stage activities	Execution mechanisms
Diagnosis	- Team mobilization; (Appendix A);	- Promote training in KM and KS;	Leader: Management; Participants: All school staff; Practice: Lecture on KM; Promoting “Knowledge Cafes”
		- Identify the stakeholders involved;	Leader: Management; Participants: Managers (pedagogy and administrative); Practice: - Meeting to define the participation of key people from each sector and form a KM team. - Appoint a management representative (management team) to monitor the project; - Management alignment meeting with the KM Team;
	- Identify the KM objectives for the school; (Appendix B)	- Choose objectives that are aligned with the organization's and the maintaining entity's strategy	Leader: Representative of the management and KM team; Participants: KM and Management Team (pedagogical and administrative); Practice: Meeting to discuss the managers' objectives in relation to KM and alignment with the maintaining entity (if necessary); Presentation of the relationship between KM and the Balanced Scorecard.
	- Analyze the infrastructure; (Appendix C);	- Identify the KM practices carried out and the IT available;	Leader: Management representative; Participants: KM team, Managers (pedagogical and administrative), and staff; Practice: Questionnaire to identify the KM practices carried out and the IT used in the organization. Consolidate the results into a spreadsheet.
	- Identify critical issues; (Appendix D);	- Identify potential problems at the school	Leader: Management representative; Participants: KM Team and Managers (pedagogical and administrative); Practice: Meeting to discuss critical issues and define potential costs (consider the practices and IT used in the organization – Appendix C); - hours of those involved; - equipment; and - technology. Compile the meeting results into a document and share with the management team for approval.
	- Study the feasibility of implementation; (Appendix E)	- Plan budget;	Leader/Responsibility: Equipe de GC; Participants: Equipe de GC e colaboradores; Prática: Questionnaire to identify the practices and IT used in the organization.
Design	- Develop the prototype; (Appendix F);	- Define goals, deadlines, and indicators;	Leader: Management representative; Participants: KM Team; Practice: - Meeting to choose a pilot sector; - Definition of critical knowledge; - Preparation of an implementation schedule; - Selection of indicators for the sector;
	- Involve the different stakeholders (internal and external); (Appendix G)	- Define how stakeholders will interact within the group;	Leader: KM team; Participants: KM team; Practice: time to map stakeholders and the way they interact with each other;
	- Design tools; (tacit and explicit/internal and external) (Appendix H);	- Choose ways to exchange and document tacit and explicit knowledge;	Leader: KM team; Participants: KM team; Practice: schedule a meeting to define the practices to be adopted for documentation and KS.

	- Establish communication systems; (Appendix I)	- Define how KM will be disseminated within the institution;	Leader: KM team; Participants: KM team; Practice: Schedule a meeting to define communication channels and the frequency of dissemination; - Involve Management in dissemination;
Implementation	- Train people and teams; (Appendix J)	- Promote training for people and teams in the pilot sector;	Leader: KM team; Participants: KM team and pilot sector staff; Practice: Training with people and teams from the pilot sector
	- Put the prototype into practice; (Appendix K)	- Start implementation;	Leader: KM Team and Pilot Sector; Participants: KM Team and Staff; Practice: Project launch event and start of implementation of what was designed.
	- Monitor the results; (Appendix L)	- Collect and analyze monitoring indicators as set out in Appendix F;	Leader: KM Team Participants: KM Team and Pilot Sector Practice: Dialogue with pilot sector staff; - monitoring meetings;
Improvement	- Get feedback; (Appendix M)	- Embrace positive and negative points;	Leader: KM Team; Participants: KM team and pilot sector; Management; Practice: qualitative interview with those involved to identify the benefits of KM for their work activities; ask what problems were identified in relation to KM; Meeting to present the results to the Management
	- Make adjustments and expand the process; (Appendix N)	- Propose improvements;	Leader: KM Team and Pilot Sector; Participants: KM Team and Staff; Practice: based on the analysis of the feedback, make adjustments at the design stage.
	- Expand into other sectors; (Appendix O)	- Design the new sectors;	Leader: KM Team; Participants: KM Team and Staff; Practice: new round of implementation with the adoption of design stage mechanisms;
Evaluation	- evaluate the process; (Appendix P)	- List indicators with potential improvements;	Leader: KM Team; Participants: KM Team and Staff; Management; Practice: monitoring system for defined indicators; Meeting with management to discuss results
	- Identify improvements; (Appendix Q)	- Discuss the results;	Leader: KM Team; Participants: KM Team and Staff Practice: meeting to analyze the indicators and apply improvements if necessary.
		- Analyze lessons learned;	Leader: KM Team; Participants: KM Team and Staff Practice: meeting to discuss the lessons learned cycle: identification and collection; selection; storage and recovery; promotion and use.

Conclusions, Limitations, and Future Research

This study aimed to advance research on KM within the field of Basic Education. The article successfully achieved its general objective of developing and evaluating a method for implementing KM in private basic education schools. The research context highlights a field that still demands further exploration, more broadly within basic education as a whole. The managers, coordinators, and teachers interviewed recognize the significance of KM in education, yet few KM practices are currently implemented in schools. This underscores the necessity for a KM implementation method to guide these discussions within educational institutions. Although the research focuses on an organization that is over a hundred years old, operating across various contexts, cultures, and realities in Brazil and globally, KM as a topic remains in its early stages. The method presented and evaluated aligns with the need for a practical and objective approach, facilitating the implementation of KM in basic education settings.

From an academic perspective, the originality of this study is to present a method for implementing KM, evaluated by professionals from the technical and administrative staff of basic education institutions. It suggests that implementation frameworks developed for other sectors may not be directly applicable to education, due to the unique characteristics of this administrative and pedagogical field, and because frameworks are not detailed as a method. Furthermore, the study deepens the discussion on KM within the context of education, highlighting its particular challenges and opportunities. The managerial contribution lies in offering school managers a tool that has been peer-reviewed, designed to enhance both technical and administrative KM. The implementation of this tool aims to improve outcomes in both the pedagogical and administrative domains, fostering overall institutional development. This study acknowledges certain limitations. The vast and diverse landscape of basic education institutions in Brazil necessitated specific focus areas, which restricted the generalizability of the research findings. However, concentrating on private schools allowed for a more detailed proposal and evaluation of the KM implementation method. This focus provides valuable insights for managers in these institutions to enhance their approach to KM. Future research could explore an action research approach to apply this method in practice. Additionally, expanding the study to include other school networks, both within and beyond Brazil, would broaden the scope and applicability of the findings across a wider range of basic education institutions.

Acknowledgement

The authors are grateful for the support provided by CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico – Brazil) research grant 311407/2023-4 and FCT (Fundação para a Ciência e Tecnologia, Portugal), national funding through research grant UIDB/04521/2020 & UID06522.

References

- Akhavan, P., & Pezeshkan, A. (2014). Knowledge management critical failure factors: A multi-case study. *VINE: The Journal of Information and Knowledge Management Systems*, 44(1), 22–41. <https://doi.org/10.1108/VINE-08-2012-0035>
- Alarcon, D. F., & Spanhol, F. J. (2015). *Gestão do conhecimento na educação a distância: Práticas para o sucesso*. Pimenta Cultural.
- Alharbi, G. L., & Aloud, M. E. (2024). The effects of knowledge management processes on service sector performance: Evidence from Saudi Arabia. *Humanities and Social Sciences Communications*, 11(1), 1–19.
- Antunes, M. T. P. (2000). *Capital intelectual*. Atlas.
- Asad, M. M., Rind, A. A., & Abdulmuhsin, A. A. (2022). The effect of knowledge management in educational settings: A study of education management organizations (EMOs) schools of Pakistan. *International Journal of Organizational Analysis*, 30(5), 1156–1171. <https://doi.org/10.1108/IJOA-12-2020-2521>
- Bindra, S., Srivastava, S., Sharma, D., & Ongsakul, V. (2020). Reviewing knowledge-based

- dynamic capabilities: Perspectives through meta-analysis. *Journal for Global Business Advancement*, 13(3), 273–295.
- Binotto, E., Nakayama, M. K., & Siqueira, E. S. (2013). A criação de conhecimento para a gestão de propriedades rurais no Brasil e na Austrália. *RESR*, 51(4), 681–698.
- Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly*, 29(1), 87–111.
- Braquehais, A. P., Wilbert, J. W., Moresi, E. A. D., & Dandolini, G. A. (2017). O papel da cultura organizacional na gestão do conhecimento revisão de literatura de 2009 a 2015. *Perspectivas em Gestão & Conhecimento*, 7, 80–93.
- Carneiro, M. R., Fulani, T. Z., & Da Costa, E. M. (2017). Práticas e mecanismos de compartilhamento de conhecimento em um programa de aceleração de startups. *Navus-Revista de Gestão e Tecnologia*, 7(2), 113–123.
<https://doi.org/10.22279/navus.2017.v7n2.p113-123.531>
- Cheng, E. C. K. (2014). *Knowledge management for school education*. Springer.
<https://doi.org/10.1007/978-981-287-233-3>
- Cheng, E. C. K., Wu, S. W., & Hu, J. (2017). Knowledge management implementation in the school context: Case studies on knowledge leadership, storytelling, and taxonomy. *Educational Research for Policy and Practice*, 16(2), 177–188.
- Chu, K. (2016). Leading knowledge management in a secondary school. *Journal of Knowledge Management*, 20(5), 1104–1147.
- da Silva Neto, F. F., & La Falce, J. L. (2024). The influence of environmental factors on knowledge management and innovation capacity. *Online Journal of Applied Knowledge Management (OJAKM)*, 12(1), 1–33.
- Daghfous, A., & Kah, M. M. O. (2006). Knowledge management implementation in SMEs: A framework and a case illustration. *Journal of Information & Knowledge Management*, 5(2), 107–115. <https://doi.org/10.1142/S0219649206001360>
- Dipura, S., & Soediantono, D. (2022). Benefits of key performance indicators (KPI) and proposed applications in the defense industry: A literature review. *International Journal of Social and Management Studies*, 3(4), 23–33. <https://doi.org/10.54443/ijsmas.v3i4.321>
- Dubé, L., & Paré, G. (2003). Rigor in information systems positivist case research: Current practices, trends, and recommendations. *MIS Quarterly*, 27(4), 597–636.
- Fullan, M. (2002). The role of leadership in the promotion of knowledge management in schools. *Teachers and Teaching: Theory and Practice*, 8(3-4), 409–419.
- Gibbs, G. R. (2007). *Analyzing qualitative data*. Sage Publications.
<https://doi.org/10.4135/9781849208574>
- Goldoni, V., & Oliveira, M. (2010). Knowledge management metrics in software development companies in Brazil. *Journal of Knowledge Management*, 14(2), 301–313.

<https://doi.org/10.1108/13673271011032427>

- Gunawan, W., Soeparno, H., & Asrol, M. (2019). The influence of social media and knowledge management to improve employees creativity. *International Journal of Advanced Trends in Computer Science and Engineering*, 8(5), 1927–1936.
<https://doi.org/10.30534/ijatcse/2019/17852019>
- Guzzo, C. H., & Marcondes, C. H. (2022). Modelagem de contexto para lições aprendidas e o uso de ontologia para compartilhamento. *Proceedings of the XV Seminar on Ontology Research in Brazil (ONTOBRAS 2022)* (CEUR Workshop Proceedings, Vol. 3346). CEUR-WS.org. <https://ceur-ws.org/Vol-3346/>
- Hakiman, H., Munadi, M., & Ernawati, F. (2019). Design of knowledge management implementation in Islamic universities. *Humanities & Social Sciences Reviews*, 7(1), 266–277.
- Henz, J. L., & Oliveira, M. (2024a). Knowledge management implementation: A systematic literature review. *Knowledge and Process Management*, 31, 284–294.
- Henz, J. L., & Oliveira, M. (2024b). Practices of knowledge management: Multiple case study in confessional basic education schools. *Revista Alcance*, 31(1), 80–97.
- Isaiás, P., Miranda, P., & Pífano, S. (2021). Framework for Web 2.0 implementation in higher education: Experts' validation. *Higher Education Quarterly*, 75(4), 648–666.
- King, W. R. (2009). *Knowledge management and organizational learning*. Springer US.
- Liebowitz, J., & Paliszkievicz, J. (2019). The next generation of knowledge management: Implications for LIS educators and professionals. *Online Journal of Applied Knowledge Management*, 7(2), 16–28.
- Luccas, T. M. L., & Damian, I. P. M. (2022). O papel da comunicação no processo do compartilhamento do conhecimento no ambiente organizacional. *Revista Ibero-Americana de Ciência da Informação*, 15(1), 106–125.
<https://doi.org/10.21708/av.2022.v15n1.a106-125>
- Machado, C. P., Uripa, A. G. B. Da C., & Dal Forno, L. F. (2017) Gestão do conhecimento no ensino público: uma agenda de pesquisa. *Revista Cesumar*, 22(1), 145–165.
- Martínez, J., & López, H. (2019). Theoretical appraisal model of knowledge management and organizational learning practices in accredited business schools. *Knowledge Management An International Journal*, 18(3-4), 1–20.
- McAdam, R. (2000). Knowledge management as a catalyst for innovation within organizations: a qualitative study. *Knowledge and Process Management*, 7(4), 233–241.
- Oliveira, M., & Freitas, H. M. R. de. (1998). Focus group - pesquisa qualitativa: resgatando a teoria, instrumentalizando o seu planejamento. *Revista de Administração da USP - Rausp*, 33(3), 83–91.
- Oliveira, M., Caldeira, M., & Romão, M. J. B. (2012). Knowledge management implementation: An evolutionary process in organizations. *Knowledge and Process Management*, 19(1),

17–26.

- Pizzaia, Â., Pegino, P. M. F., Colla, J. E., & Tenório, N. (2018). O papel da comunicação na gestão do conhecimento: aspectos relevantes e estímulo a novas pesquisas. *Perspectivas em Gestão & Conhecimento*, 8(2), 62–81. <https://doi.org/10.22478/ufpb.2237-4639.2018v8n2.32944>
- Pepulim, M. E. H., Fialho, F. A. P., & Souza, R. P. L. de. (2013). Semiótica enquanto disciplina científica: Uma ferramenta para uma gestão do conhecimento eficiente e eficaz. *Perspectivas em Gestão & Conhecimento*, 3(2), 170–181.
- Reis, V. G. (2007). *Gestão do conhecimento e cultura organizacional: um estudo de caso na Fiocruz-Bahia*. Dissertação (Mestrado Profissional em Saúde Pública) - Centro de Pesquisas Aggeu Magalhães, Fundação Oswaldo Cruz, Recife.
- Salzano, K. A., Maurer, C. A., Wyvratt, J. M., Stewart, T., Peck, J., Rygiel, B., & Petree, T. (2016). A knowledge management framework and approach for clinical development. *Therapeutic Innovation & Regulatory Science*, 50(5), 536–545. <https://doi.org/10.1177/2168479016664773>
- Tan, N. N. (2023). Knowledge management in higher Education in vietnam: Insights from higher education leaders: An exploratory study. *Journal of Information & Knowledge Management*, 22(3), 1–19.
- Younas, M., Noor, A. S. M., & Arshad, M. (2022). Cloud-based knowledge management framework for decision making in higher education institutions. *Intelligent Automation Soft Computing*, 31(1), 83–99. <https://doi.org/10.32604/iasc.2022.019280>

Author Biographies

Jader Henz graduated in pedagogy from the University of Santa Cruz do Sul, Brazil; master's in Education from Federal University of Rio Grande, Brazil. He obtained his doctoral degree in Business Administration from the Pontifical Catholic University of Rio Grande do Sul (PUCRS), School of Business, Brazil, in 2024. His current research interests include Knowledge Management, Knowledge Sharing, Organizational Strategy and Basic Education.

Mírian Oliveira is a professor and researcher at Business School, Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS), Brazil and invited professor and member of Advance/CSG at Lisbon School of Economics and Management, Universidade de Lisboa, Portugal. She obtained her doctoral degree in Business Administration from the UFRGS in 1999. Her current research interests include Knowledge Management, Knowledge Sharing, Knowledge Hiding, Knowledge Hoarding, and Research Method. Her research on these topics has been published widely (e.g., in *Journal of Knowledge Management*, *Knowledge and Process Management*, *Computers in Human Behavior*, and *Journal of Business Research*).

APPENDIX A – Diagnosis: Team Mobilization

Promote training in KM and KS:

- a) Promote training in km and KS for the entire school: a. Define speaker name and profile; b. Involve and inform the different entities of the school community about KM: educators, class leaders, student associations, parents, and families.
- b) Identify the stakeholders that will be involved:
 - a. Define the number and name those involved in each sector;
 - b. Invite them to an awareness-raising and launch meeting (Verify the need for participation of external stakeholders: suppliers, families, consultants);
 - c. Appoint a representative of the management team to the position of coordinator/sponsor;
 - d. Promote “Knowledge Cafés” - Bring together groups of collaborators to share knowledge and experiences, and learn from each other. The goal is to improve decision-making, innovation, collaboration, and KS.

APPENDIX B – Diagnosis: Identifying the KM Objectives for the School

Meeting to discuss the managers’ objectives in relation to KM, aligning with the maintaining entity’s strategy:

- a) Identify the objectives that are aligned with the organization’s strategy: a. improve academic performance: objective associated with students’ academic results; b. improve administrative performance: objective associated with the search for improved financial and administrative results; c. retain talent: reduce employee turnover (administrative technicians and teachers); d. retain and attract students: objective associated with increasing student numbers at the institution; e. Innovate teaching methodology: objective associated with new and better teaching and learning methodologies; f) Strengthen organizational culture: objective associated with improving results in organizational environment assessments; g. Others: Which ones?
- b) Align with the maintaining entity: How to convince the maintaining entity that lacks interest in implementing KM in the schools?
- c) Present the relationship between KM and BSC: a. How do the four KM processes – Knowledge Creation, Storage, Sharing, and Creation – impact the performance perspectives of the BSC – People, Internal Processes, Customers, and Sustainability? b. How can the school become more competitive and improve its academic and administrative performance by implementing KM?

Before the meeting, send an email with a topic summary of the article:

Cordeiro, M. M., Oliveira, M. & Sanchez-Segura, M. I. (2022). The influence of the knowledge management processes on the results in basic education schools. *Journal of Knowledge Management*, 26, 2699-2717.

APPENDIX C – Diagnosis: Analyze the Infrastructure

Questionnaire to identify IT practices used in the institution:

- a) Identify available practices and IT:
 - a. What technology is already used? Microsoft 365: OneDrive, Teams, Word, SharePoint...; Google tools: Drive, Meet, Chat, Classroom...; Zoom; Teaching Systems; Educational platforms; Others – which ones?
 - b. What are the KS practices?
 - i. Communities of practice; Mentoring and Coaching; Internal and external benchmarking; Best practices; Face-to-face and virtual forums; Mapping knowledge audit; Online collaboration tools; Skills management system; Personal skills bank; Organizational skills bank; Organizational memory/lessons learned/knowledge bank; Organizational intelligence systems/Competitive intelligence; Corporative education; Intellectual capital management/intangible asset management; Content management; Electronic document management; Meetings of pedagogical and administrative teams; Provision of pedagogical and administrative documents; Feedback moments; Student results monitoring system; Enrollment management system; Communication tools; Congresses and events in the area; Meetings and negotiations with suppliers; Others: which ones?

APPENDIX D – Diagnosis: Identifying Critical Issues

Meeting to identify critical issues:

- a) Identify potential problems at school: a. How to protect knowledge in the face of high staff turnover; b. How to involve teachers with low workload at school; c. How to reconcile KM with the existing high demand; d. How to involve educators who have little interest in the topic.

Before the meeting, send an email with a topic summary of the article:

Vuori, V., Helander, N., & Mäenpää, S. (2018). Network-level knowledge sharing: Leveraging Riege's model of knowledge barriers. *Knowledge Management Research & Practice*, 17, 3, 253–263.

APPENDIX E – Diagnosis: Study the Feasibility of Implementing KM

Meeting to examine the financial feasibility of the implementation:

- a) Identify possible investments/costs associated with the implementation of KM: a. Allocate hours of employees involved in the project; b. Define the technology to be used; c. Check required equipment;
- b) Assemble the findings of the meeting and share with the management team for approval.

APPENDIX F – Design: Developing the Prototype

Meeting to choose the pilot sector, with decisions regarding the next steps:

- a) Define goals, deadlines, and indicators:
 - a. Choose a sector in which the pilot implementation project can be conducted;
 - b. Create an implementation schedule;
 - c. Define key knowledge: i. What knowledge is important for the administrative sector?; ii. What knowledge is important for the pedagogical sector?
 - d. Select indicators for the sector, for example: i. Creation: number of discussion groups on pedagogical innovation; number of valid contributions to organizational memory; ii. Storage: quantity of documents stored in the system; number of registered users using the system; quality of stored knowledge; feedback on results; iii. Dissemination: number of communities of practice; employees' perception of available internal communication channels; iv. Usage: number of useful suggestions incorporated into production processes; system usage statistics; number of pedagogical innovations; v. Measurement: comparison between the number of planning hours and improvements obtained with KM;

Before the meeting, send an email with a topic summary of the article:

Goldoni, V., & Oliveira, M. (2010). Knowledge management metrics in software development companies in Brazil. *Journal of Knowledge Management*, 14, 301–313.

APPENDIX G – Design: Involving Different Stakeholders

Agenda for meeting to map stakeholders and their form of interaction: define how stakeholders will interact within the group: a. Identify internal and external stakeholders; b. Map the forms of interaction with stakeholders.

APPENDIX H – Design: Designing Tools

Agenda for meeting to define KM's own mechanisms:

- a) Review the diagnosis, check whether there are existing practices that can be adopted
- b) Choose ways to exchange and document tacit and explicit knowledge:
 - a. Improve academic performance: exchange knowledge between teachers in the same area/series of activity; document through the development of projects, teaching sequences, and shared classes; protect knowledge (Involve stakeholders: publishers, speakers, educational consultants);
 - b. Improve administrative performance: ensure access to data suitable for management decision-making; document data through systems: Power BI, financial systems; (Hiring of external consultancy; training and education programs);
 - c. Retain talent: i. Enhance the sense of belonging to the institution, with attractive and competitive remuneration; ii. Retain and attract students: Guarantee of teaching quality, welcoming environment, and experience of institutional values; iii. Innovate teaching methodology: Combine traditional methods with active learning methodologies; iv.

Strengthen organizational culture: Continuous training of employees; ensuring a balance between work and social life; well-being and health at work programs.

APPENDIX I – Design: Establishing Communication Systems

Agenda for meeting to define communication channels and frequency of dissemination: Decide how KM will be disclosed in the Institution: a. Define the communication channels and the frequency of disclosure (Institutional email, WhatsApp groups, Social networks, Intranet); b. Involve the school management so that the information is disseminated through management channels.

APPENDIX J – Implementation: Training People and Teams

Training sessions with people and teams from the pilot sector - Provide training for people and teams before starting implementation: a. Define the necessary changes; b. Introduce the practices and IT that will be used.

APPENDIX K – Implementation: Putting the Prototype into Practice

Project launch event - Start implementation: a. Put the design into practice; b. Hold a launch meeting/event (Symbolic event to mark the beginning of the project and to make the proposal known to everyone; Define the frequency of team meetings).

APPENDIX L – Implementation: Monitoring Results

Regular dialogue with pilot sector staff: a. Follow-up and monitoring meetings; b. Individual dialogues.

APPENDIX M – Improvement: Getting Feedback

Survey with those involved to evaluate the work: Embrace positive and negative points: a. Ask those involved about the benefits of KM for their activities: Set the deadline for the first feedback; Understand the benefits observed by the sector; b. Ask what problems were identified in relation to KM.

APPENDIX N – Improvement: Make adjustments and Expand KM

Based on the research results, propose the necessary changes: propose improvements. Based on the feedback analysis, make adjustments at the design stage: In monitoring meetings, identify which aspects can be modified to improve results; Be careful not to distort the model.

APPENDIX O – Improvement: Expand to Other Services/Sectors

New implementation round with the adoption of “design stage” mechanisms: Create the design for the new sectors (Adopt the design stage mechanisms: Repeat the process and adapt it to the new

sector, or, if possible, to more sectors).

APPENDIX P – Evaluation: Evaluating the Process

Indicator monitoring system: List indicators with potential improvements: Measure the indicators defined in the “design” stage.

APPENDIX Q – Assessment: Identifying Improvements

Meeting to analyze indicators and discuss improvements: discuss the results. a. Analyze the indicators and apply improvements if necessary: i. Pedagogical indicators; ii. Administrative indicators; b. Lessons learned: i. Identification and collection; ii. Selection; iii. Storage and Retrieval; iv. Promotion and use.

APPENDIX R – First Version of KMEDU

The implementation method outlined in Table 4 is the first version of KMEDU, before the changes implemented after the Focus Group.

Table 4. First version of KMEDU

Stage	Stage objectives	Stage activities	Execution mechanisms
Diagnosis	- Identify the KM objectives for the school; (Appendix A)	- Choose objectives that are aligned with the organization's and the maintaining entity's strategy	Leader: Representative of the management and KM team; Participants: KM and Management Team (pedagogical and administrative); Practice: Meeting to discuss the managers' objectives in relation to KM and alignment with the maintaining entity (if necessary); Presentation of the relationship between KM and the Balanced Score Card)
	- Team mobilization; (Appendix B);	- To initiate work that promotes a Culture of Knowledge Sharing;	Leader: Manager Participants: Manager Practice: Lecture about KM; Promotion of “knowledge Café”.
		- Identify the stakeholders involved;	Leader: Management; Participants: Managers (pedagogy and administrative); Practice: - Meeting to define the participation of key people from each sector and form a KM team. - Appoint a management representative (management team) to monitor the project; - Management alignment meeting with the KM Team.
	- Analyze the infrastructure; (Appendix C);	- Identify the KM practices carried out and the IT available;	Leader: Management representative; Participants: KM team, Managers (pedagogical and administrative), and staff; Practice: Questionnaire to identify the KM practices carried out and the IT used in the organization. Consolidate the results into a spreadsheet.
	- Identify critical issues; (Appendix D);	- Identify potential problems at the school	Leader: Management representative; Participants: KM Team and Managers (pedagogical and administrative); Practice:

			Meeting to discuss critical issues and define potential costs (consider the practices and IT used in the organization – Appendix C): - hours of those involved; - equipment; and - technology. Compile the meeting results into a document and share with the management team for approval.
	- Study the feasibility of implementation; (Appendix E)	- Plan budget;	Leader/Responsibility: KM Team; Participants: GC Team and collaborators; Practice: Questionnaire to identify the practices and IT used in the organization.
Design	- Develop the prototype; (Appendix F);	- Define goals, deadlines, and indicators;	Leader: Management representative; Participants: KM Team; Practice: - Meeting to choose a pilot sector; - Definition of critical knowledge; - Preparation of an implementation schedule; - Selection of indicators for the sector;
	- Projetar ferramentas; (tácito e explícito/ interno e externo) (Apêndice G);	- Escolher formas de trocar e documentar conhecimentos tácitos e explícitos;	Responsável: Equipe de GC Participantes: Equipe de GC Prática: pauta em reunião para definir as práticas a serem adotadas para documentação e compartilhamento do conhecimento.
	- Design tools; (tacit and explicit/internal and external) (Appendix H);	- Choose ways to exchange and document tacit and explicit knowledge;	Leader: KM team; Participants: KM team; Practice: schedule a meeting to define the practices to be adopted for documentation and KS.
	- Involve the different stakeholders (internal and external); (Appendix I)	- Define how stakeholders will interact within the group;	Leader: KM team; Participants: KM team; Practice: time to map stakeholders and the way they interact with each other;
Implementation	- Put the prototype into practice; (Appendix K)	- Start implementation;	Leader: KM Team and Pilot Sector; Participants: KM Team and Staff; Practice: Project launch event and start of implementation of what was designed.
Improvement	- Get feedback; (Appendix M)	- Embrace positive and negative points;	Leader: KM Team; Participants: KM team and pilot sector; Management; Practice: qualitative interview with those involved to identify the benefits of KM for their work activities; ask what problems were identified in relation to KM; Meeting to present the results to the Management
	- Make adjustments and expand the process; (Appendix N)	- Propose improvements;	Leader: KM Team and Pilot Sector; Participants: KM Team and Staff; Practice: based on the analysis of the feedback, make adjustments at the design stage.
	- Expand into other sectors; (Appendix O)	- Design the new sectors;	Leader: KM Team; Participants: KM Team and Staff; Practice: new round of implementation with the adoption of design stage mechanisms;
Evaluation	- Evaluate the process; (Appendix P)	- List indicators with potential improvements;	Leader: KM Team; Participants: KM Team and Staff; Management; Practice: monitoring system for defined indicators; Meeting with management to discuss results
	- Identify improvements; (Appendix Q)	- Discuss the results;	Leader: KM Team; Participants: KM Team and Staff Practice: meeting to analyze the indicators and apply improvements if necessary.