

KNOWLEDGE MANAGEMENT DIAGNOSIS TOOL FOR A COMMUNITY OF PRACTICE: DISTANCE LEARNING SCHOOL CASE AT UNIVERSIDAD MILITAR NUEVA GRANADA

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Abstract

Knowledge management for the design of a community of practice [CoP] requires the analysis of several factors that allow the creation of value, the optimization of existing resources. It also requires the identification of primary sources of knowledge, as well as determining the missing ones to consult them from the participants' perceptions. Thus, the topics that must be discussed to achieve the goal negotiation and participation are prioritized.

For the elaboration of the proposal of a diagnosis tool, 81 articles that report empirical and documentary evidence were analyzed in which key variables for creating a community of practice were recorded and contextualized in the distance learning school from a public university; in addition to organizing them from five sources where knowledge is generated, such as the individual, facts or actions, influence or effect, solutions, and innovations. Furthermore, possible evidence will be presented, including documentary, perception, and performance evidence, as part of the quality assurance systems in higher education. In the case of the distance learning school, it was found that some aspects of the strategy implementation and dialogue must be analyzed and adjusted.

Documentary relevance is recognized as a starting point, but construction and progress must create a collaborative learning environment that adds value to its participants.

Keywords: *communities of practice, knowledge management, virtual education diagnostic tools*

1. INTRODUCTION

The distance learning school at Universidad Militar Nueva Granada [FAEDIS] aims to establish a community of practice [CoP]. To do so, it requires the design of a diagnostic tool for recognizing the achievement of results based on supplies and perceptions such as carrying out a pedagogical contribution (Vieira, 2019), providing solutions to common and repetitive issues, (Ogbamichael and Warden, 2018), contributing to teaching processes, (Akinyemi *et al.*, 2019), establishing processes and models that allow knowledge transfer (Lehtovaara *et al.*, 2019), among others.

The baseline definition is the starting point for the strategy that guarantees the CoP success since the activities design will allow the reduction of gaps in the practice development in the higher education context (de Araujo Pereira and Massao Hayahi, 2016). In the literature review, it was found that diagnoses are made from factors such as the use of technological resources to support practices (Lache *et al.*, 2016), motivation in a broad sense including trust, contributions recognition and linkage with performance assessment (Nthabiseng Mosala-Bryant and Hoskins, 2017), measurement of managers' perception about the usefulness of the CoP (Soares Campos *et al.*, 2018). Furthermore, aspects such as flexible organizational structures, distributed leadership, shared values and collaborative school culture were analyzed. (Morales-Inga and Morales-Tristán, 2020).

On the other hand, there are CoP experiences in the educational context starting only from the theoretical review without prior consultation, but from experimentation and exposure to the contents, with results of low participation of the peripheral group (Bedoya González *et al.*, 2017). Likewise, other studies report from the implementation some relevant aspects for the creation and sustainability of it. Organizational environment, technology, people and knowledge transfer processes are considered as success factors (Jagasia *et al.*, 2015). Bearing in mind this last aspect, it is suggested that the flow of knowledge is given from the creation, organization, formalization, distribution, application and evolution so that it emphasizes on the content's design which agrees with de Carvalho-Filho *et al.*,

(2020). His proposal on tips for the creation of CoP suggest that it is necessary to have a main project, also to define a core group, to select the facilitator and to guarantee the institutional support.

Therefore, the knowledge management diagnosis for the design of a community of practice requires the analysis of several factors that allow the creation of value, the optimization of existing resources. It also requires the identification of primary sources of knowledge, as well as determining the missing ones to consult them from the participants' perceptions. Thus, the topics that must be discussed to achieve the goal negotiation and participation are prioritized.

2. MATERIALS AND METHODS

2.1. Materials

A documentary review was conducted. It includes 81 research articles on communities of practice, published in indexed journals from 2015 to 2021. There are 35 communities of practice systematizations; they are in some stage of the life cycle and report relevant aspects such as characteristics, success factors, sponsorship, leadership, strategy, metrics, internal organization, relationship and tools (Roulleaux, 2008). The remaining 46 make review of theoretical elements and conditions that were reported from other experiences, in response to the search criteria Community of practice OR communities or practice AND Knowledge management.

2.2. Methods

The research is qualitative in response to the question: How to diagnose knowledge management in a Distance Learning School at UMNG as a baseline for the design of a community of practice? Using the main characteristics of this research type, a space-time frame was required (Pimienta Prieto, 2017), which constitutes in the object of study to the Distance Learning School and the need to consolidate a community of practice involving teachers and administrative staff. Likewise, it is inductive as it starts from the literature review in contrast with the sources, documents and evidence that are available.

2.2.1. Analysis criteria

The articles were analyzed based on criteria such as the life cycle stage and its characteristics, methodological criteria such as field, scope, objective, variables or central concepts, territory or country, methodological strategy, instrument, sources, sample size, analysis technique, mechanisms to provide accuracy and validity, results, conclusions, managerial implications, limitations, main ideas and relevance.

Followed by the articles analysis, the coding was carried out based on criteria such as the differentials of each CoP and the strategies used. It also included the dynamic elements required and the limitations encountered such as missing information and information gaps, to classify them based on the elements of the knowledge management models using Atlas Ti.

3. RESULTS

Communities of practice are constituted as a tool for knowledge management (Shahmoradi *et al.*, 2017), and are the knowledge management models that support decision making on the sources and elements that are the generators of knowledge, as shown below:

Authors	Individual	Facts actions	Influence effect	Solutions	Innovations
(Hicks <i>et al.</i> , 2006)	Content in people's minds	Data encoded and located	Data used in context for decision making	Instructions to perform an activity	Knowledge-based resource exploitation
(Plaz Landaeta, 2004)	Intelligence dimension: thematic experts	Distribution dimension: processing, coding and transmission mechanisms		Learning dimension: mental models for understanding for the application to specific problems	Renewal dimension: processes of renewal and creation of new knowledge
(Harris, 1996)		Create similarities for knowledge transfer	It is required to analyze the problem in context for looking for a solution		Part of previous experiences to produce new knowledge
(Nonaka and Takeuchi, 1995)	Sharing personal experience	Formulate concepts	Systemic knowledge	Translation into operation	
(González Millan, 2017)	Information-based approach: knowledge centered on people and their action	Information-based approach: look for organize, filter and present information in order to improve understanding	Enterprise-based approach: related to the strategy development	Information-based approach: knowledge is generated in the organizational structure	Process-based approach: exploiting intangible resources for the new knowledge generation

Table 1. Sources from knowledge management models

Source: author's elaboration based on (Harris, 1996) (Hicks *et al.*, 2006) (Plaz Landaeta, 2004) (Nonaka and Takeuchi, 1995) (González Millan, 2017)

Bearing in mind the aforementioned, the knowledge management diagnosis requires identifying the relevant variables for the design and implementation of a CoP. They are listed below with the corresponding sources that were referenced and recommended, as well as the crucial aspects for the baseline analysis and development for a CoP.

Element	Variables and analysis criteria from the authors
People	Learning styles (de Araujo Pereira and Massao Hayahi, 2016) Digital competencies (Martínez-Bravo <i>et al.</i> , 2018) Motivation/confidence (Hernández-Soto <i>et al.</i> , 2021; Rahman <i>et al.</i> , 2020) Conflicts of interest (de Araujo Pereira and Massao Hayahi, 2016; Waris <i>et al.</i> , 2019) Belonging (de Araujo Pereira and Massao Hayahi, 2016) Individual goals (Rahman <i>et al.</i> , 2020) Personal mastery or expertise (Auer <i>et al.</i> , 2020; de Oliveira <i>et al.</i> , 2015;
Facts/actions	Use of collaborative methodologies and tolos (Bandlow and Buckley, 2016; Bedoya González <i>et al.</i> , 2017; Roberts, 2021) Institutional policies and documents (Hernández-Soto <i>et al.</i> , 2021)(Rahman <i>et al.</i> , 2020) Technological infrastructure (Martínez-Bravo <i>et al.</i> , 2018; McLoughlin <i>et al.</i> , 2018)

Element	Variables and analysis criteria from the authors
	Access to data (Fingrut et al., 2018; Barnett et al., 2016)
	Documentary structure design (McLoughlin <i>et al.</i> , 2018)
	Relationship with performance assessment (Mosala-Bryant and Hoskins, 2017)
Influence/effect	Organizational culture (Gütersloh and Linxen, 2017; Morales-Inga and Morales-Tristán, 2020)
	Learning environment (Austin et al., 2021; Duarte et al., 2020; Murnane and Browne, 2016)
	Pedagogical model (Roberts, 2021)
	Activities that enhance practice/support (de Araujo Pereira and Massao Hayahi, 2016) (Fingrut <i>et al.</i> , 2018)
	Organizational learning (Kimble, 2020; Soares Campos et al., 2018; Ogbamichael and Warden, 2018)
	Goal negotiation (Sigala <i>et al.</i> , 2019)
	Sub-communities' formation (Martínez-Bravo <i>et al.</i> , 2018)
	Sense of community (Coombs et al., 2017) (Sharma and Land, 2019)
	Management support (Cantero et al., 2018) (Cheng and Lee, 2016) (Coombs et al., 2017)
	Flexible organizational structures (Rahman <i>et al.</i> , 2020)
	(Seyednazari <i>et al.</i> , 2018)
	Participation protocol (Sigala <i>et al.</i> , 2019)
	Opinion leaders' participation (Roberts, 2021)
	Branding and identity seals (Auer et al., 2020) (Fingrut et al., 2018)
	Common projects (Hermanrud, 2017) (Lehtovaara <i>et al.</i> , 2019)
Solutions	Inter-organizational learning/Partnerships (Jeffs et al., 2016) (Musteen et al., 2018)
	Meaningful communication (McLoughlin et al., 2018) (Shahmoradi et al., 2017)
	Teamwork (Handzic et al., 2021) (Sigala et al., 2019)
	Shared leadership (Cantero et al., 2018) (Hernández-Soto et al., 2021)
	Interdisciplinary team (Sharma and Land, 2019)
	Volunteering (Mosala-Bryant and Hoskins, 2017) (Mailloux and Lacharité, 2020)
	Linking knowledge to strategic decisions (Lacasta Tintorer <i>et al.</i> , 2015)
Innovations	Knowledge transfer/knowledge complexity (Mazorodze and Buckley, 2020) (Lehman, 2017) (Shahmoradi et al., 2017)
	Co-design (Adelle, 2019) (Perrott, 2015) (Sharma and Land, 2019)
	New products and services (Sabella <i>et al.</i> , 2018)
	Process design (Sharma and Land, 2019)
	Publications (Shahmoradi <i>et al.</i> , 2017)

Table 2. Proposed tool for knowledge management in communities of practice [CoP].

Source: own elaboration

The variables and elements can be verified from documentary evidence based on the participants' perception and in the performance of a dynamic proposal, and its respective validation process. Next, it is the proposal developed from the FAEDIS case:

Element	Variables and analysis criteria from the authors	Evidence in FAEDIS			Observation
		Documentary	Perception	Performance	
People	Learning styles		X		Tools such as the Vark test can be used.
	Digital competencies		X	X	Teachers and administrative staff are from Distance Learning School. However, they may have different levels of development.
	Motivation/confidence		X	X	It is necessary to make a contrast between what is reported and what is evidenced in the dynamics of the CoP activities.
	Conflicts of interest		X		It is required to dialogue and foresee actions that do not inhibit participation.
	Belonging		X	X	It is relevant to contrast what is reported and what is evidenced in the dynamics of the CoP activities.
	Individual goals		X		It is a motivating factor to look for a relationship for personal benefit.
	Personal mastery or expertise		X		Emphasis should be placed on tacit knowledge rather than explicit knowledge. It can be checked in CVLACs or curricula.
Facts/actions	Use of collaborative methodologies and tools		X	X	It is possible to start from the consultation, then build content and report the usage and its contribution to the dynamics of the CoP.
	Institutional policies and documents	X			It is necessary to start from the School's strategy and projection in order to make an alignment.
	Technological infrastructure	X		X	There are documents that describe the School's technological capacity. It can be improved from the development of the CoP.
	Access to data	X		X	Review the data protection and security protocols and make the necessary adjustments in the implementation.
	Documentary structure design	X			The CoP fulfills a function of organizational memory. Therefore, its contribution can be aligned with the quality assurance systems.

Element	Variables and analysis criteria from the authors	Evidence in FAEDIS			Observation
		Documentary	Perception	Performance	
Influence/effect	Relationship with performance assessment	X		X	There are guidelines for inclusion in the work plans and in connection with the performance assessment.
	Organizational culture		X		Discuss aspects that can limit or enhance a CoP.
	Learning environment	X		X	There are guides for mediation in classrooms and the School's YouTube channel. It can be adjusted for the CoP in the implementation.
	Pedagogical model	X			CoPs are reported as a socio-constructivist strategy.
	Activities that enhance practice/support		X	X	Activities should be focused on contributing to the projects.
	Organizational learning		X	X	Mechanisms and ways of learning should be identified, as well as resources and knowledge management tools.
	Goal negotiation		X		Expectations and benefits wanted should be discussed.
	Sub-communities' formation		X	X	It can be segmented from interests, fields of expertise or by projects.
	Sense of community		X	X	It can be checked. However, it is an aspect that can be evidenced in the performance.
	Management support		X	X	It can be checked. However, it is an aspect that can be evidenced in the performance.
	Flexible organizational structures	X		X	Documentary review can be done, making possible adjustments according to the needs of the CoP.
	Participation protocol	X		X	It should be a dynamic document that is adjusted according to the evolution and progress.
	Opinion leaders' participation			X	It is outlined in the dynamic of the CoP.
	Branding and identity seals	X	X		It should be proposed and validated based on the interest representativeness of the CoP.
	Common projects	X	X		It should be identified from the institutional documents and the perceptions about the School's challenges.

Element	Variables and analysis criteria from the authors	Evidence in FAEDIS			Observation
		Documentary	Perception	Performance	
Solutions	Inter-organizational learning/Partnerships	X		X	It should be based on documentary review and linkage to generate added value in the CoP.
	Meaningful communication			X	There must be a communicative dimension that establishes the guidelines for convening and participation.
	Teamwork (Handzic et al., 2021) (Sigala et al., 2019)		X	X	Discuss the possibilities and their linkage to the organizational structure of the CoP.
	Shared leadership		X	X	Identify alternatives of the CoP dynamic.
	Interdisciplinary team			X	Explore possibilities for inter-program and inter-departmental work.
	Volunteering		X		Explore motivations and altruistic actions in favor of the CoP.
	Linking knowledge to strategic decisions		X	X	Identify the needs of the organizational strategy and the links with the knowledge produced in the CoP.
Innovations	Knowledge transfer/ knowledge complexity			X	It is the result of the CoP dynamic.
	Co-design		X		It can be included in a second phase.
	New products and services (Sabella et al., 2018)	X	X		The information produced can be used for the design of new programs.
	Process design	X	X		The mission process can be strengthened: teaching-learning.
	Publications	X			It is feasible to produce publications based on the knowledge produced in the CoP.

Table 3. Application of knowledge management diagnosis tool in FAEDIS.

Source: own elaboration

4. DISCUSSION

The CoP are strengthened by some elements and they can be diagnosed from the perception consultation or in the activities practice. It is relevant not to limit them to the documentary review as their design and implementation depend on intangible factors such as organizational culture (Enríquez, 2019), the participants' competencies (Martínez-Bravo *et al.*, 2018), the perceived benefits (McLoughlin *et al.*, 2018), the tacit or non-traditional knowledge use (Freeburg, 2018), the participants' self-motivation and self-regulation seen in their belonging (de Araujo Pereira and Massao Hayahi, 2016), among other aspects. Those can be reported as positive from the perception measurement or having negative results such as low participation or a short life cycle that does not allow the CoP achievements fulfillment.

In the review, no standard or initial route for the design of a CoP was found. However, it is common to mention the need for dialogue and linear monitoring, in order to make adjustments to the processes according to the objectives proposed by the community of practice (Barnett *et al.*, 2016). Likewise, the participants' collaboration in the construction of dimensions of the CoP (Sztangret, 2016) and the permanent feedback that allows detecting new contributions and good practices to generate value in the knowledge management strategy.

This work contribution is a tool that can be adaptable to the conditions of different organizations who have the need to design a CoP. Since it is based on organizing the differentials and elements that have been analyzed and used by other researchers from the theoretical and empirical review according to the models of knowledge management and the several generating sources. Additionally, different evidences are used in quality assurance systems such as documentary, perception and performance, recognized in the fields of higher education.

One of the limitations is related to the fact that it, as any proposal, requires a validation process to verify the variables behavior as a whole and to carry out an accurate process to find other elements specific to the cultural and organizational context.

5. CONCLUSIONS

Knowledge management tools are based on sources and feasible evidence. However, the construction of a community of practice should be a participatory process, it has to allow dialogue and collective construction. Therefore, efforts should be made in the design of the different communicative, human and technological dimensions in order to have constant feedback. One of the approaches proposed in the research conducted is action research because it is coherent with the needs of the CoP as it requires interventions from the contents' design that make the CoP dynamic in relation to the goals and projects that will be common to the participants.

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REFERENCES

- Adelle, C. (2019), "Creating knowledge democracy in South Africa: The role of communities of practice", *South African Journal of Science*, Academy of Science of South Africa, available at: <https://doi.org/10.17159/sajs.2019/5888>.
- Akinyemi, A.F., Rembe, S., Shumba, J. and Adewumi, T.M. (2019), "Collaboration and mutual support as processes established by communities of practice to improve continuing professional teachers' development in high schools", *Cogent Education*, Taylor and Francis Ltd., Vol. 6 No. 1, available at: <https://doi.org/10.1080/2331186X.2019.1685446>.
- de Araujo Pereira, V.R. and Massao Hayahi, C.R. (2016), "Comunidade de prática o ensino superior", *Revista Ibero-Americana de Estudos Em Educação*, Vol. 11 No. 1, pp. 204–222.
- Auer, A.M., Hanson, P., Brady-Fryer, B., Alati-It, J. and Johnson, A.L. (2020), "Communities of practice in Alberta Health Services: Advancing a learning organisation", *Health Research Policy and Systems*, BioMed Central, Vol. 18 No. 1, available at: <https://doi.org/10.1186/s12961-020-00603-y>.
- Bandlow, K. and Buckley, S. (2016), "ICT Tools Usage's Effectiveness by Communities of Practice in Promoting Knowledge Management Innovation", *Proceedings of the International Conference on E-Learning*, pp. 21–25.

- Barnett, S., Jones, S.C., Bennett, S., Iverson, D. and Robinson, L. (2016), "A virtual community of practice for general practice training: A preimplementation survey", *JMIR Medical Education*, JMIR Publications Inc., 1 July, available at: <https://doi.org/10.2196/mededu.5318>.
- Bedoya González, J.R., Betancourt Cardona, M.O. and Villa Montoya, F.L. (2017), "Creación de una comunidad de práctica para la formación de docentes en la integración de las TIC a los procesos de aprendizaje y enseñanza de lenguas extranjeras", *Ikala, Revista de Lenguaje y Cultura*, Universidad de Antioquia, Vol. 23 No. 1, pp. 121–139.
- Cantero, N., Antonio, R. and Vallejo, P. (2018), "Los retos de la dirección escolar en los centros comunitarios de aprendizaje de andalucía the challenges of school management in the andalusian learning communities centers", *Evista Española de Orientación y Psicopedagogía*, Vol. 29 No. 3, pp. 61–78.
- de Carvalho-Filho, M.A., Tio, R.A. and Steinert, Y. (2020), "Twelve tips for implementing a community of practice for faculty development", *Medical Teacher*, Taylor and Francis Ltd, Vol. 42 No. 2, pp. 143–149.
- Coombs, J., Thomas, M., Rush, N. and Martin, E. (2017), "A Community of Practice Approach to Delivering Research Support Services in a Post-92 Higher Education Institution: A Reflective Case Study", *New Review of Academic Librarianship*, Routledge, Vol. 23 No. 2–3, pp. 159–170.
- Duarte, V.D.V., Gazquez, A.H., Massuda, E.M. and Macuch, R.D.S. (2020), "Comunidades de pratica em saúde - análise da plataforma online do Ministério da Saúde Brasileiro", *Revista de Gestão Em Sistemas de Saúde*, University Nove de Julho, Vol. 9 No. 2, pp. 303–318.
- Enríquez, Á. (2019), "Gestión de conocimiento y universidad, visión prospectiva a partir de sus expertos", *Revista CS*, Universidad Icesi, pp. 273–297.
- Fingrut, W., Beck, L.A. and Lo, D. (2018), "Building an oncology community of practice to improve cancer care", *Current Oncology*, Multimed Inc., Vol. 25 No. 6, pp. 371–377.
- Freeburg, D. (2018), "Going beyond the text: Turning classrooms into communities of practice to uncover and create noncanonical knowledge", *Education for Information*, IOS Press, Vol. 34 No. 1, pp. 79–95.
- González Millan, J.J., R.D.M.T. (2017), *Gestión Del Conocimiento, Capital Intelectual e Indicadores Aplicados*, edited by Diaz de Santos, 1st ed., Vol. 1, available at: <http://www.ebooks7-24.com.ezproxy.umng.edu.co/?il=6764> (accessed 2 January 2022).
- Gütersloh, C. and Linxen, S. (2017), "Mobile Knowledge Management in Maintenance", *Proceedings of the International Conference on E-Learning*, pp. 94–102.
- Harris, D.B. (1996), *Creating a Knowledge Centric Information Technology Environment*, available at: <http://eprints.rclis.org/24722/> (accessed 9 December 2021).
- Hermanrud, I. (2017), "Best Fit KM: Linking Communities of Practice to an Innovation Strategy", *Electronic Journal of Knowledge Management*, Vol. 15, p. 28.
- Hernández-Soto, R., Gutiérrez-Ortega, M. and Rubia-Avi, B. (2021), "Key factors in knowledge sharing behavior in virtual communities of practice: A systematic review", *Education in the Knowledge Society*, Ediciones Universidad de Salamanca, available at: <https://doi.org/10.14201/eks.22715>.
- Hicks, R.C., Dattero, R. and Galup, S.D. (2006), "The five-tier knowledge management hierarchy", *Journal of Knowledge Management*, Vol. 10 No. 1, pp. 19–31.
- Jagasia, J., Baul, U. and Mallik, D. (2015), "A Framework for Communities of Practice in Learning Organizations", *Business Perspectives and Research*, SAGE Publications Ltd, Vol. 3 No. 1, pp. 1–20.
- Jeffs, L., McShane, J., Flintoft, V., White, P., Indar, A., Maione, M., Lopez, A.J., et al. (2016), "Contextualizing learning to improve care using collaborative communities of practices", *BMC Health*

Services Research, BioMed Central Ltd., Vol. 16 No. 1, available at:<https://doi.org/10.1186/s12913-016-1566-4>.

Lacasta Tintorer, D., Flayeh Beneyto, S., Manresa, J.M., Torán-Monserrat, P., Jiménez-Zarco, A., Torrent-Sellens, J. and Saigí-Rubió, F. (2015), “Understanding the discriminant factors that influence the adoption and use of clinical communities of practice: The ECOPIH case”, *BMC Health Services Research*, BioMed Central Ltd., Vol. 15 No. 1, available at:<https://doi.org/10.1186/s12913-015-1036-4>.

Lache, L., León, A.P., Bravo, E., Becerra, L.E. and Forero, D. (2016), “Las tecnologías de información y comunicación como prácticas de referencia en la gestión de conocimiento: una revisión sistemática de la literatura”, *Revista UIS Ingenierías*, Vol. 15 No. 1, pp. 27–40.

Lehtovaara, J., Seppänen, O., Peltokorpi, A., Lehtovaara, J. and Seppänen, O. (2019), “Improving the Learning of Design Management Operations by Exploiting Production’s Feedback: Design Science Approach Lehtovaara, Seppänen, and Peltokorpi: Improving the Learning of Design Management Operations by Exploiting Production’s Feedback: Design Science Approach”, *Design Science Approach Lean Construction Journal*, pp. 64–75.

Martínez-Bravo, M.C., Chalezquer Sádaba, C. and Serrano Puche, J. (2018), “Desarrollo de competencias digitales en comunidades virtuales: una análisis de SclarTIC”, *Prisma Social*, No. 20, pp. 129–159.

Mazorodze, A.H. and Buckley, S. (2020), “A review of knowledge transfer tools in knowledge-intensive organisations”, *SA Journal of Information Management*, AOSIS, Vol. 22 No. 1, available at:<https://doi.org/10.4102/sajim.v22i1.1135>.

McLoughlin, C., Patel, K.D., O’Callaghan, T. and Reeves, S. (2018), “The use of virtual communities of practice to improve interprofessional collaboration and education: findings from an integrated review”, *Journal of Interprofessional Care*, Taylor and Francis Ltd, 4 March.

Morales-Inga, S. and Morales-Tristán, O. (2020), “Viabilidad de Comunidades Profesionales de Aprendizaje en sistemas educativos de bajo desempeño”, *Educación y Educadores*, Vol. 1, pp. 1–23.

Mosala-Bryant, N.N. and Hoskins, R.G. (2017), “Motivational theory and knowledge sharing in the public service”, *SA Journal of Information Management*, AOSIS, Vol. 19 No. 1, available at:<https://doi.org/10.4102/sajim.v19i1.772>.

Nonaka, I. and Takeuchi, H. (1995), *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, edited by Oxford University Press, Oxford, New York.

Nthabiseng Mosala-Bryant, N. and Hoskins, R.G. (2017), “Motivational theory and knowledge sharing in the public service”, *SA Journal of Information Management*, AOSIS, Vol. 19 No. 1, available at:<https://doi.org/10.4102/sajim.v19i1.772>.

Ogbamichael, H.B. and Warden, S. (2018), “Information and knowledge sharing within virtual communities of practice”, *SA Journal of Information Management*, AOSIS, Vol. 20 No. 1, available at:<https://doi.org/10.4102/sajim.v20i1.956>.

de Oliveira, P.S.G., dos Santos Lopes, M. and da Silva, L.F. (2015), “Proposição Do Modelo Dtc Para Gestão Do Conhecimento Em Empresas De Consultoria Em Tecnologia De Informação Proposition Of Dtc Model For Knowledge Management In Information Technology Consulting Enterprises”, *Revista de Administração Da UFSM*, Vol. 8 No. 4, pp. 650–665.

Pimienta Prieto, J.H. (2017), *Metodología de La Investigación: Competencias + Aprendizaje + Vida*, 1st ed., Vol. 1, Pearson Educación, México, D.F.

Plaz Landaeta, R. (2004), *Gestión Del Conocimiento: Una Visión Del Aprendizaje Organizacional*, Madrid, available at: <https://pesquisa.bvsalud.org/portal/resource/pt/lis-10717> (accessed 2 January 2022).

- Rahman, W., Hussain, J., Shah, F.A. and Rahman, H. (2020), “Conceptual Proposition: The Mediating Role of Social Capital between Knowledge Sharing Factors and Knowledge Sharing.”, *City University Research Journal (CURJ)*, Vol. 3 No. 10, pp. 441–455.
- Roberts, L. (2021), ““This Is Just What We Do’: PhD Students on Becoming Scholars in a Community of Practice”, *Communications in Information Literacy*, Communications in Information Literacy, Vol. 15 No. 1, pp. 75–94.
- Roulleaux, M. (2008), *Organisation 2.0 - Le Knowledge Management Nouvelle Génération*, Paris, available at: <http://livre21.com/LIVREF/F34/F034080.pdf> (accessed 2 January 2022).
- Sabella, S.A., Markve, M.E., Groomes, D.A. and Shoemaker, M.T. (2018), *Competencies for Effective Program Evaluation and Quality Assurance in Vocational Rehabilitation*, *Journal of Rehabilitation*, Vol. 84.
- Seyednazari, N., Maleki Avarsin, S. and Yari Haj Atalou, J. (2018), “Developing Communities of Practice Model to Enhance Knowledge and Improve Learning among Faculty Members (Case Study: Tabriz University of Medical Sciences)”, *Research and Development in Medical Education*, Maad Rayan Publishing Company, Vol. 7 No. 2, pp. 82–90.
- Shahmoradi, L., Safadari, R. and Jimma, W. (2017), “Knowledge Management Implementation and the Tools Utilized in Healthcare for Evidence-Based Decision Making: A Systematic Review”, *Ethiopian Journal of Health Sciences*, 1 September.
- Sharma, P. and Land, S. (2019), “Patterns of knowledge sharing in an online affinity space for diabetes”, *Educational Technology Research and Development*, Springer New York LLC, Vol. 67 No. 2, pp. 247–275.
- Sigala, P., María, L. and Roaro, Z. (2019), *Improving the Praxis of Conversation Club Leaders in a Community of Practice: A Case Study in a Self-Access Centre*, Vol. 10.
- Soares Campos, I.M.S., de Moraes Medeiros, J.W. and Meireles de Melo, M.S. (2018), “Comunidade de prática (CoP) e aprendizagem organizacional no contexto da gestão de pessoas na Universidade Federal da Paraíba (UFPB)”, *Navus - Revista de Gestão e Tecnologia*, Serviço Nacional de Aprendizagem Comercial / SENAC SC, Vol. 8 No. 2, pp. 17–26.
- Sztangret, I. (2016), “Social media as a just-in-time-marketing--knowledge-diffusion tool on the example of it sector”, *Oeconomia*, Vol. 15 No. 4, pp. 157–169.
- Vieira, M.C. (2019), “Comunidades de práticas como espaços de formação inicial na educação de jovens e adultos”, *Revista Ibero-Americana de Estudos Em Educação*, Revista Ibero-Americana de Estudos em Educacao, Vol. 14 No. 3, pp. 1015–1029.