Knowledge Management in Education: Often the Missing Link in Developing a Robust Learning Organization

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Abstract

In March of 2020, we were sitting in our cubicles in Manchester, New Hampshire USA when an email went out to our colleagues from the President of our University asking us to calmly pack up our necessary belongings and directing us to take whatever technology was appropriate from our workstations to plan to work from our homes for the next two weeks as we watched the world in effect shut down to allow for the COVID-19 to pass. Soon, two weeks turned into two months and two months to two years. We were allowed back to our desks in a cascade effect, never at the same time out of an abundance of caution, to recover additional items and clear out our spaces for good with masks and gloves. Calendars and notes and cups with evaporated coffee were left obsolete, and untouched, as were processes on how we used to do things as we, in many ways, had to pivot on a dime to continue to offer the exceptional educational services to our students that they've grown to expect. As such, the need to rely on our knowledge management roots and pivot those slightly to not only embrace the process but also now embrace both the people who manage the process and the people who benefit from the process - those who are in the learning ecosystem – became even more necessary. An outcome of How an Effective Knowledge Management Program Supports Critical Tacit Knowledge Retention Within a Higher Education Institution: A Qualitative Intrinsic Case Study this article explores how knowledge management can be leveraged as a tool within education to support the development of a robust the ongoing development and shift as an organization shifts toward moving toward being an organization that embraces what it means to become a learning organization.

1. Introduction

The need for knowledge management in educational institutions is a growing area of study as organizations begin to focus on optimizing knowledge acquisition, storage, presentation, and application of processes within an organization [1]. According to the US Bureau of Labor Statistics (2021) close to 4,000,000 personnel employed within the United States across 5,900 institutions specializing in postsecondary, professional, and technical education, tacit knowledge is consistently lost as organizational changes are made due to attrition through retirement, new employment opportunities, and other organizational changes that may take place.

Wagner and Sternberg defined critical tacit knowledge as work-related practical knowledge learned informally on the job [2]. Critical tacit knowledge is hard to code or extract as it is not something that is usually captured formally. Tacit knowledge is not just about experiences learned on the job, but it is comprised of beliefs, values, attitudes, ideals, and elements that are related to the culture of an individual or organization and cannot be found in manuals, books, databases or files. Almost two thirds of the information received at work is transformed into tacit knowledge coming from face-to-face interactions or passive, informal interactions [3].

Many examples from organizations have shown how losing critical tacit knowledge has contributed to negative performance [4]. One example shared by DeLong (2004) came from the National Aeronautics and Space Administration (NASA), who lost the knowledge and capacity to replicate the model, navigation, and learnings of how the first man was sent to the moon. Due to a decade of cost-cutting and downsizing during the 1990s, this unique and critical knowledge was lost. Engineers were encouraged to take early retirement and many years of experience were lost. The loss of critical knowledge is not only about losing of documentation, but it is also the loss of individual and collective experience. If NASA were to try to get to the moon and back again, they would have to re-create and re-learn most of the experience [4].

Thirty years have passed, and still similar challenges remain in many organizations and teams [4]. The loss of critical tacit knowledge also reduces the capacity to innovate and co-create; challenges an organization/team's ability to pursue growth strategies; strengthens networks, relationships, and partnerships; increases vulnerability due to the loss of memory; and hampers a culture of collaboration and even the development of expertise [4]. Ultimately, knowledge management helps to improve the organization or team's learning, memory, and performance, while avoiding loss of critical tacit knowledge and low employee engagement.

To further complicate the sharing of knowledge, siloing, or segregating critical tacit knowledge is when each department creates its standard processes to suit their specific needs without communicating directly with other departments [5]. As a result, similar functions specific to a particular role within the university are developed and applied, often duplicating efforts. Siloing becomes a problem when trying to scale the organization because there is no clear or defined place to document the processes in place to capture and share this type of critical tacit knowledge.

Knowledge flow is often confined within an organization, as knowledge is usually siloed internally within specific departments. Though much of the world has moved to a digital platform, knowledge is still often confined to geographical locations. As many higher education institutions expand their reach to meet global demand and service operations are increasingly done in a geographically distributed manner, it becomes challenging to locate and effectively utilize existing knowledge bases [6]. In keeping knowledge siloed, higher education institutions are facing loss of critical tacit knowledge as leaders make personnel changes.

2. Defining a Learning Organization

With the advancement of technology and the drive and desire to provide talent with an opportunity for professional development, the shift for organizations to move toward become one that embraces the elements of a learning organization has also come to the forefront. A learning organization has a culture that promotes communication, inquiry, feedback, mutual respect, and support for persons to transfer knowledge within the organization [7]. In many organizations, corporate memory is comprised of professional knowledge, best practices and other contents that have at one time been conscious to the organization and its staff. Unfortunately, many of these memories have disappeared from corporate consciousness by having been forgotten or repressed, or the information may have been internalized as tacit knowledge and not properly captured in a knowledge management system [8].

A learning organization is founded deeply in the process of change and growth because of shared thinking and subsequent action within an organization [9]. An organization can be great at both effectively documenting and leveraging critical tacit knowledge in sharing it across the organization by establishing themselves as a learning organization. Hammoud [9] surmised that as a result, when individual or group learning becomes institutionalized, organizational learning takes place and knowledge is subsequently incorporated into non-human repositories such as routines, systems, structure, culture, and strategy.

New ideas are essential if learning is taking place within an organization. A learning organization is constantly learning and expanding its capacity to acquire and centralize knowledge for the future of any organization [7]. Comprised of five distinct characteristics, system thinking, personal mastery, mental models, shared vision, and team learning, a learning organization is a company that facilitates the education of its members and continuously transforms itself to maintain a competitive nature in the business world [7]. Though an organization does not need to belong to the academic world to be considered a "learning organization," many higher education institutions have naturally adopted this methodology to remain competitive in today's marketplace. In considering research done by Hammoud [9], Goncalves [8], and works established by Senge [7], through the analysis and application of becoming a learning organization, effective knowledge management is at the foundation of building an effective learning culture. Future research to be considered in creating a learning organization might include what specific knowledge management techniques are utilized when translating critical tacit knowledge to explicit knowledge through knowledge systems.

3. Case Study Overview and Current Knowledge/Learning Org. Synopsis

Four major themes came from the findings of the case study *How an Effective Knowledge Management Program Supports Critical Tacit Knowledge Retention Within a Higher Education Institution: A Qualitative Intrinsic Case Study.* The themes included:
1. Strong community and culture can facilitate openness in knowledge sharing.
2. Stakeholders buy-in is needed to create a robust learning organization.
3. Transparency assists in breaking down silos.
4. Training & consulting can help prevent critical knowledge loss.

At present, we are currently focusing on building upon the foundation laid for each of the themes discovered through the research. In doing so, we have focused efforts specifically on defining what elements go into a learning organization in the context of KM and higher education, breaking knowledge silos and building community. Though training and consulting are things we are always actively working on, we have mainly focused on the first three themes with training and consulting always being interjected where appropriate.

4. Elements of a Learning Organization

The Elements of a Learning Organization is a visual representation of a perspective of where and how the Knowledge Management (KM) process fits into a learning organization. When considering the traditional structure and lifecycle of a given employee's role within an organization, the cycle starts with onboarding (see Figure 1).

When an employee joins a team, there is typically some level of onboarding that takes place for an employee to go through as they join an organization and subsequently a team within the organization. If the employee is new to both the organization and the team, they likely are having to go through different levels of orientation where they need to not only learn the intricacies of the organization itself, but also the norms and culture of the team in which they are joining as well. Even if the employee is not new to the organization, there is a level of onboarding they might experience as they transfer into a new team or department in learning as it is still imperative the employee learn about their team dynamics and functions.

As the employee starts to become more comfortable in their role and acclimated to their new position, on-the-job training starts to take place. This is where the employees take what they might have learned during their onboarding and start to put the method into practice. They might not do this alone at first as they may either be shadowing or shadowed by a mentor to ensure that they are applying the steps appropriately, however, this is where the knowledge gathered during onboarding starts to become a reality and the employee starts to see it used in action firsthand.

When the employee becomes more skilled at their role and can work independently, this is where the on-the-job training phase moves shifts into experience. Though the employee might not be actively learning new parts of their job daily anymore as they might have during the first two phases of their training, the employee is certainly starting to garner experience and may start to develop their own best practices or techniques they rely on to complete various tasks each day. The employee starts to rely more on their experience to complete their daily tasks rather than solely on process maps or handbooks they once relied on.

The next element of the learning organization flow to consider is knowledge capture. Since the employee is now starting to feel confident in their daily tasks and might have their own twists on methods that exist within their roles. This is where knowledge capture should begin to happen through capturing this new knowledge, often tacit in nature, and/or updating any existing knowledge documents that might exist already.
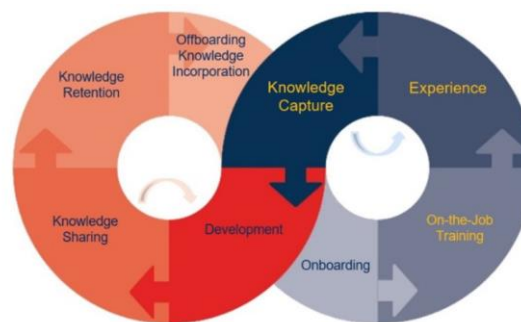

Figure 1. Elements of a Learning Organization (concept development from Tim Billbrough, Southern NH University)

The development phase is two-fold: the employee continues their development professionally to continue their growth in their role and with their skill set as well as in updating and expanding upon their formalized processes as related to their specific role. This phase can typically shift seamlessly into the knowledge sharing phase. The knowledge sharing phase is critical and often forgotten or overlooked as not necessary where updates and information should be shared often and frequently to ensure that there are no bottlenecks, barriers or unintentional silos that might hinder freely sharing knowledge cross functionally through the organization.

As knowledge sharing starts to become regular practice, the knowledge sharing starts to shift naturally into the process as knowledge retention. Retention is not just rooted in the people of the organization, but also rooted within its deliverables, artifacts and documents/repositories regularly utilized throughout the organization. As the tools get developed, implemented, and subsequently utilized, the final phase of the elements of a learning organization flow is incorporates knowledge into the offboarding process for an employee back into the onboarding procedures for the process to start over.

5. Building Community

Though we have different teams and knowledge systems throughout the University, our formalized KM journey within the University began as, and is still in many ways, a grassroots movement with no formalized top-down leadership strategy, rather, with a growing body of support from cross-collaborative membership from all levels of members forming a Knowledge Management Community of Practice. What started as a group of about 25 individuals who had knowledge, primarily knowledge bases, as part of their job and some interest in chatting in a conference in person in early 2020 was replaced with about 25 people, shifted with a global pandemic to adapt to a largely remote setting where we now leverage more of a Knowledge Café format starting

each meeting with a sharing presentation, where a volunteer to talk a bit about something KM related, either a project their team was working on, their team itself and its knowledge, or even an interesting topic that had little to do with a University project. Then, we would then have a section where the community leaders, usually myself, would report on the work we had been doing towards our goals and then we would finish off with a community exercise that changed for each meeting. Sometimes we would seek feedback on a specific topic or item, others we have a general discussion, using breakout rooms, around different topics, allowing for more sharing and faster transfer.

This approach proved to be very successful and now, nearly 48 months after our first meeting, word of mouth and our outreach has caused the CoP to grow to an invited list well over 120 people and a regular attendance of 40+, nearly 50, individuals. Our small, grassroots movement has now been recognized as subject matter experts and utilized as such in many projects university wide to help solidify best practices and to be used for consulting and training purposes. In focusing on maintaining growth of our grassroots movement and being a 'people first' movement, we have been able to identify with the concept that our people are our greatest asset and that we often learn and are able to share the most from each other. Additionally, while the university still working toward a more formalized knowledge strategy, our team of dedicated facilitators has worked collaboratively to develop a business case to pitch to drive more momentum and formalize KM as a standard practice within the university.

6. Obstacles and Solutions to Knowledge Sharing Success

Knowledge siloing exists within a business division or group of employees within an organization that fails to communicate freely or effectively with other groups, including management. However, when an organization's culture does not encourage employees to share knowledge and work collaboratively, knowledge silos can grow quite quickly and prevent the organization from responding to business needs in an agile manner cc To a certain point, allowing and enabling those in an organization to communicate completely freely with each other across some of the established organizational boundaries, without the consent and involvement of management, presents a new knowledge control structure in breaking knowledge silos [12]. How organizations manage their knowledge has always been complex, but the complexity has increased and so has the speed at which an organization must act and react to changing environments.

In a hieratical organization, the complexity of knowledge management or storage by relegating it within isolated departments has often been a longstanding procedure [12]. Control is often a strong cultural element, so if demand and control is still the guiding principle within an organization, this often creates knowledge silos and a power struggle for control over the knowledge. As previously mentioned, organizations often have many layers of complexity that contribute to knowledge silos. To break down the siloed barriers, a good framework needs to be in place in which the members of the organization may operate autonomously if a decision needs to be made quickly and flexibly; often, this is where knowledge gets 'stuck' as ownership of knowledge comes into question [12].

Knowledge silos are not always due to control; sometimes knowledge silos are part of the natural evolution of project growth. As a project grows beyond the scope of one or two key team members, the information that has been kept solely in their own heads needs to be passed on [12]. Though best intentions often happen with process documentation to share with the broader team, knowledge sharing, or documentation does not always happen in a reliable manner as priorities tend to shift and proper dissemination of information does not always occur [10].

As time goes on and the team grows, knowledge does get dispersed, but it is often done through informal channels such as word of mouth through conversations at the watercooler or over conversations in passing at unrelated meetings. Ideally, as the team grows and becomes more dispersed throughout the organization, this oral tradition often evolves to written documentation [10]. Getting the tacit knowledge out of the heads and written down to a formal document is the only way to enable teams to grow and for knowledge to be positioned to be effectively shared organization-wide outside of silos [12].

To overcome the knowledge silos within an organization, there needs to be both a shift in culture, as well as the ability to implement a long-term, scalable solution as soon as possible to stop the organization from ossifying into a culture of closed-off, fragmentary silos [11]. When the organizational culture can shift and welcome the potential for breaking knowledge silos, this can be done through communicating the bigger picture and applying transparency and communication as key skills. By tacking organizational silos from the top down, the root cause of the silos that might be found within leadership can be adequately addressed. Interdepartmental cooperation through cross-functional teams with cross-functional training where teams are made up of individuals from different

function areas can be a strong solution in breaking silo barriers. Finally, in implementing a system for knowledge management that all levels of the organization can access freely can allow for the flow and sharing of knowledge organization wide [10], [11].

According to Jardine [14], recognizing consequences of a siloed information environment can lead to formal recommendations for improving the alignment between organizational departments enterprise wide. With the information found on supporting the need for capturing critical tacit knowledge, sharing it freely through knowledge sharing, and breaking down knowledge silos, further research will advance the understanding and application of how sharing critical tacit knowledge can support an organization's learning culture.

The notion of community creates a social fabric for learning. To support communal knowledge sharing and a culture of learning from each other across business units and departments university wide, garnering buy-in and providing support for the existing communities of practice and development of new ones found throughout the university will enable knowledge sharing at large. Research from Wohllebe and Götz [13] suggested that a community or culture that by establishing a domain of knowledge, members enter on common ground based on common interests which inspires members to participate and ultimately guides their learning to give meaning to their actions. If the inspiration and meaning of employees experience fosters interactions and encourages a willingness to share ideas across the university, knowledge sharing will become embedded as widespread practice.

7. Conclusion

The three themes that helped inform the recommendations for practice of when developing these elements of a learning organization in relation to knowledge management were strong community and culture can facilitate openness in knowledge sharing, stakeholders buy-in is needed to create a robust learning organization, and transparency assists in breaking down silos. When incorporating recommendations for practices such as fostering a culture for knowledge sharing, stakeholder commitment for knowledge management as well as communication and collaboration, it became clear that many of these considerations were already naturally occurring within our knowledge sharing system and needed a little more support to stabilize, support and steady the efforts across the university to make it more cohesive rather than disparate. Though still a work in progress, we are encouraged by the progress we have made thus far and are excited to see the continued growth toward becoming a organization that embraces KM through learning.

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