

KNOWLEDGE MANAGEMENT A TEACHER EDUCATOR'S PERSPECTIVE

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INTRODUCTION

Policymakers and stakeholders must focus their efforts on advancing student learning and managing more effectively the knowledge that could be learned by the best practices for improved learning and higher achievement.

Garvin (1998) in Harvard's Business Review on Knowledge Management defines the learning organization as "an organization skilled at creating, acquiring, and transferring knowledge, at modifying its behaviour to reflect new knowledge and insights." Ruggles (1998) in Berkeley's California Management Review categorizes knowledge-focused activities "those activities generating new knowledge, accessing valuable knowledge from outside sources; using accessible knowledge in decision making; embedding knowledge and processes; representing knowledge in databases; facilitating knowledge growth through culture; transferring existing knowledge into other parts of the organization; and measuring the value of knowledge assets and/or impact of knowledge management".

The knowledge learned from the best practices used in the best classrooms can provide formative data to help manage teacher-training colleges particularly instruction with more efficiency and effectiveness.

What is Knowledge Management ?

To define Knowledge Management, it is necessary to understand what knowledge is and the difference between data, information and knowledge. Data can be illustrated as a fact, which has not been structured. Information is the relevant, structured and meaningful

data. Knowledge, on the other hand, is acquired through personal experience or the study of factual information. (Gundry, 1998).

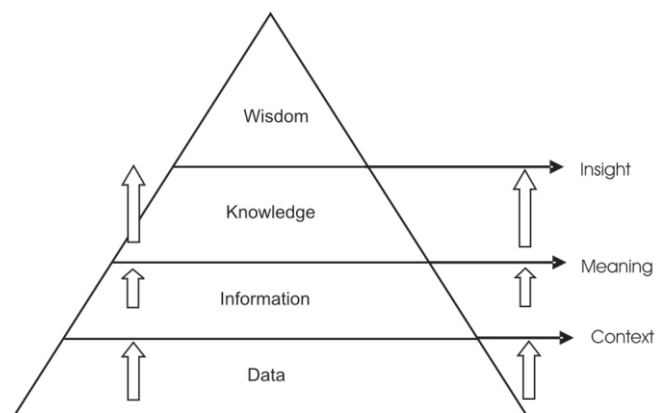


Figure 1: *Knowledge, information and data*

Knowledge Management can be defined as a systematic process that creates, captures, shares and analyses knowledge in ways that directly improve performance. It is about helping people communicate and share information. The goal of Knowledge Management is to improve the creation, dissemination, and exploitation of knowledge for the purpose of building competitive advantage. In the final analysis, Knowledge management can be interpreted as the ability to get the right information to the right people at the right time, and in the right place, so that an organization can be operated smoothly and efficiently.

Knowledge management is the collection of knowledge on best practices or lessons learned; the sharing of those practices and lessons to those who can use them; and the application of the practices or lessons for subsequent innovation and/or intervention in the classroom. Knowledge management takes advantage of an

organization's most valuable asset the collective expertise of its employees and partners. Knowledge management provides a repository for written information on a given subject, besides making available to the organization as a whole the knowledge that is in people's heads. This knowledge may be the most valuable of all because it is put into context and it is frequently more extensive and up-to-date and more useful for decision-making.

No decision is difficult to make if you will get all of the facts.

General George S. Patton

Knowledge Management framework in the context of teacher education

Figure 2 shows a multi-dimensional view of Knowledge Management. This framework starts from Institutional Strategy and Knowledge Management Strategy to Knowledge Management Infrastructure.



Figure 2: *KM framework teacher education*

The strategy for Knowledge Management should link clearly to institutional objectives and encompass both visions of the long-term practices and short-term initiatives. To build up an effective Knowledge Management infrastructure it is necessary to :

- Develop a culture of openness
- Promote sharing and teamwork
- Motivate and engage employees
- Embed Knowledge Management in day-to-day operations.

Successful Knowledge Management practice requires effective Knowledge Management strategy, which should be aligned with institutional strategy.

Knowledge Management Strategy

Linking Activities to the Knowledge Management Framework.

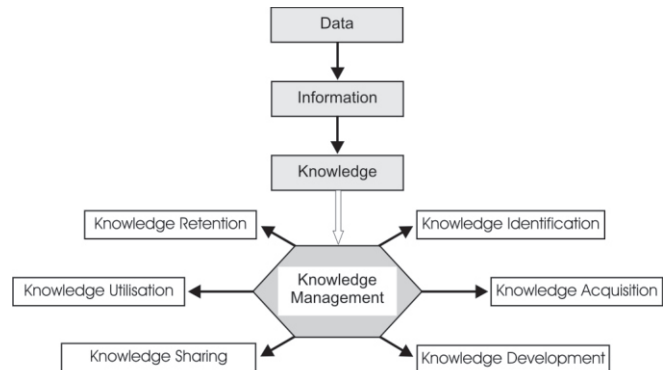


Figure 3: *Knowledge Management Strategy*

Figure 3 indicates the different components within the knowledge management framework (acting as a series of inter-linked activities) that have specific roles. These are identification, acquisition, development, sharing, utilization and retention.

- Knowledge Identification represents the effort of the teacher training college to trace data, information, knowledge, and know-how that exist inside the organization and in society. Here, one could look into registers, catalogues, prospectus, calendars, log books, files and so on.
- Knowledge Acquisition represents the effort by the teacher training college to obtain knowledge either through experiences with stakeholders or by purchasing knowledge and skills from other sources. Under this category, knowledge could be obtained through alumni, teachers in service, current teacher trainees, schools, other colleges of education, media, placement agencies and so on.
- Knowledge Development represents the effort by the teacher training college to improve itself in a variety of ways through the use of knowledge within the environment. The knowledge acquired through different sources, like number of alumni placed in international schools or number of hits on website per day, would act as feedback for future action.

- **Knowledge Sharing** represents the effort by the teacher training college to distribute knowledge through the college to those who need to use it to make decisions within the college. Here, one could consider not only the instructional strategies in use, but also participation of faculty and students in seminars, conferences, collaboration with other college staff working on projects, participation by stakeholders to the college for celebration of important days, and such.
- **Knowledge Utilization** represents the effort by the teacher training college to ensure that all knowledge contained within the organization is usable and used. This implies that in the teacher education set up, based on feedback from stakeholders, new courses could be introduced, better facilities could be provided to student teachers, good liaison between cooperating schools and training college could be developed.
- **Knowledge Retention** represents the effort by the teacher training college to choose, keep and revise knowledge as time goes on, particularly where tacit knowledge exists in people's heads (trainees leaving the college, staff members retiring).

These activities do not take place in isolation. They are in fact, strongly linked to each other. Most importantly they operate within the needs of the teacher training college and are bound to the institutional strategy. Some activities upgrade two (or more) different types of knowledge resources at the same time. For example, sending employees on process optimization courses can qualify as both an employee and process activity. The rule of thumb in this case can be to position the activity on the knowledge resource, which is put most in focus. Parent teacher meetings should therefore be positioned under communication and not under people. This also applies to conference representation, because the teacher training institution's image (customer resource) is in focus. The employee resource is not in focus even though employees represent the company at the conference. For example, where 'employee satisfaction with

technologies' could be positioned. The rule of thumb is that the activity should be classified according to the *qualities it describes*. This means that 'employee satisfaction with technologies' should be considered to be a technology quality and should therefore be positioned as technology and not under people.

Innovation is a strategy that is illustrated using a series of diverse indicators, which should be interpreted as a whole. The same applies to other combined concepts such as 'structure', which may range across numerous activity types and therefore be represented by many different indicators.

Review of the literature

Koulopoulos and Frappaolo's (2000) research findings indicate that most KM performance measurement activity is focused on developing financial metrics for reporting and valuing intellectual capital and activity analysis for incentivisation. However, according to Stewart (1999), Davenport and Prusak (2000) and Koulopoulos and Frappaolo (2000), the development of knowledge management metrics is widespread.

Activity Analysis

The current practice is to conduct a knowledge audit prior to implementing a KM strategy and to periodically conduct such audits thereafter. As explained by Koulopoulos and Frappaolo (2000), this auditing tool is necessary to assess several aspects of the knowledge characteristics of the organization:

- Current level of knowledge usage and communication;
- Current condition of KM;
- Identification of potential problem areas;
- Perceived value of knowledge within the organisation;
- Identification of knowledge gaps;
- Profiling of employees knowledge;
- Mapping of knowledge resources available to the

organisation; and Identification of communities of practice/interest.

According to Koulopoulos and Frappaolo (2000), knowledge audits should measure the following elements:

- The role of structure;
- Technology experience, perceptions, requirements;
- The impact of culture;
- The nature of process management;
- Sources of innovation;
- Models of communication;
- Strategy; and
- Perceptions of the current KM initiative.

Each of these factors is measured separately and plotted on a chart (Figure 4). Connecting the plots depicts the KM environment, revealing the areas of weakness, strengths and opportunities for KM. A scale of zero to ten can be used to plot elements and management investigation into each area produces qualitative assessment of the KM environment. The knowledge audit can be used to benchmark the organisation against others using KM in the same industry. It can also be used to justify the use of a knowledge management metric (Koulopoulos and Frappaolo, 2000).

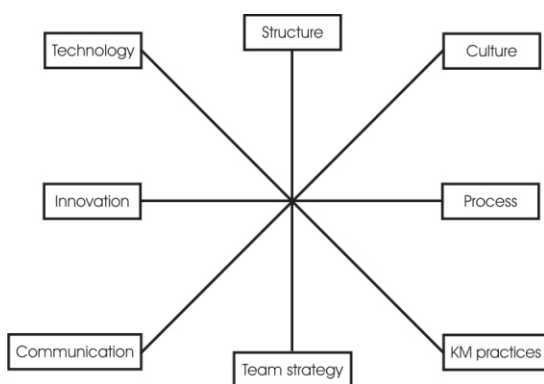


Figure 4: Model for Knowledge Management

Knowledge Management is viewed from a two-dimensional perspective. The first dimension (Figure 3) consists of activities that are critical to knowledge creation and innovation, knowledge exchange, knowledge

capture, knowledge reuse and knowledge internalization. Collectively, these processes build a learning organization one skilled at creating, acquiring and transferring knowledge as well as adapting its actions to reflect new insight and innovation.

The second dimension (Figure 4) consists of elements that enable or influence knowledge creation activities. These include:

Structure, Culture, Process, KM practices, Team strategy, Communication, Innovation, Technology.

To capture KM practices in each of these areas a simple code can be used:

- **Red** -- insufficient for training college needs
- **Yellow** -- available to some degree but exhibiting less consistency or currency than desired
- **Green** -- available, maintained, and accessible

Structure refers to the alignment of institutional and KM strategies

Culture is the environment and context in which KM processes must occur (often described in terms of values, norms, and practices).

Process indicates the processes that knowledge workers use to achieve organization mission and goals. The Process assessment is examined a subset of mission-oriented processes that staff use on a routine basis in support of the training college stakeholders. These processes involve tasks such as teacher trainee assessment, task leadership, placement, alumni and strategic planning. Interviews can be conducted with staff to obtain a picture of the extent of integration and the level of knowledge at which the activities of knowledge exchange, knowledge capture, and knowledge reuse are being performed.

KM practices refers to the measures or metrics captured to determine if KM improvement is occurring or if a benefit is being derived. Davenport and Prusak (1997) report that it is

relatively straightforward to measure use of knowledge. They contend that the metric for an input/output cycle can be derived from tracking database queries and inputs, while the auditing of e-mail messages between individuals can identify knowledge sharers. Management can use this information to remove material that is not in demand and analyze why certain material is popular. For example, knowledge exchange at all levels of the organization would receive a rating of green, whereas exchange at only the department level would receive a yellow rating

Team strategy People are vital in any knowledge management exercise.

"Your most precious possession is not your financial assets. Your most precious possession is the people you have working there, and what they carry around in their heads."

Robert Reich

Communication Koulopoulos and Frappaolo (2000) and Davenport and Prusak (2000) report that it is important to recognize knowledge sharing in the context of communities. Their research indicates that implementing a KM incentive scheme in the context of community creates trust, and challenges the individual's belief that knowledge is power by encouraging them to share and creates benchmarks for knowledge sharing that can be emulated by other communities within the enterprise.

Innovation refers to a pervasive attitude that allows teacher-training colleges to see beyond the present and create a future vision. It is a novel change that has diffused into the working of the training college.

Technology is evaluated based on the use of KM technologies based on a review of benchmarking studies, conference proceedings, Web resources, and KM journals identifying these technologies and the best practice features for each. A rating can be given to each area depending on whether a technology was operational and exhibited best practice features (green), operational or in

prototype with some best practice features (yellow), or had no operational capability (red).

In Figure 5, the teacher training college A profiled with the dotted line has little in the way of formal KM technology or practices, yet it demonstrates an ideal environment for leveraging KM practices and technologies. However, the teacher training college B profiled with the dark black line has KM technology and practices, yet demonstrates an organizational environment that undermines its KM efforts. Neither college is ideal. Understanding where and how to overcome the inadequacies of each college is the purpose of a knowledge audit.

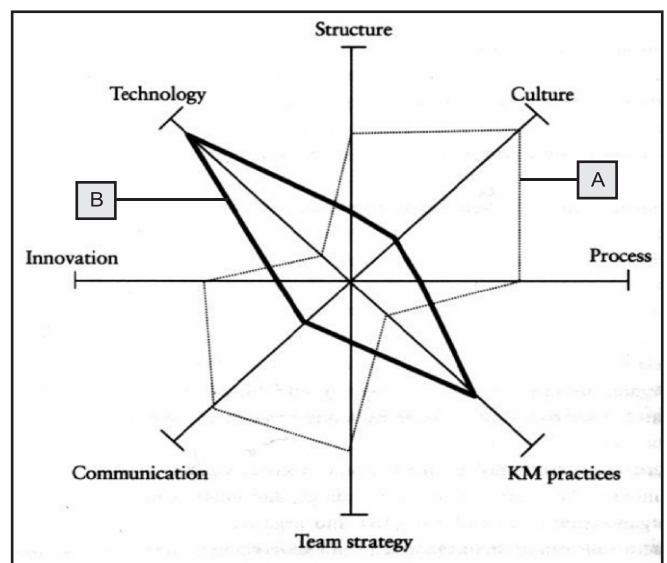


Figure 5: Knowledge Audit (adapted from Koulopoulos and Frappaolo 2000)

KM Assessment Approach

Knowledge management is not a project that begins and ends, but an ongoing and developing change in the way a teacher training college operates.

The goal of the KM assessment is to:

- Identify strengths and weaknesses (from an enterprise perspective) in knowledge-leveraging capability,
- Benchmark the teacher training college against other KM leaders
- Recommend future steps.

Figure 6 explains the steps to be followed in a Knowledge Management Continuous improvement programme.

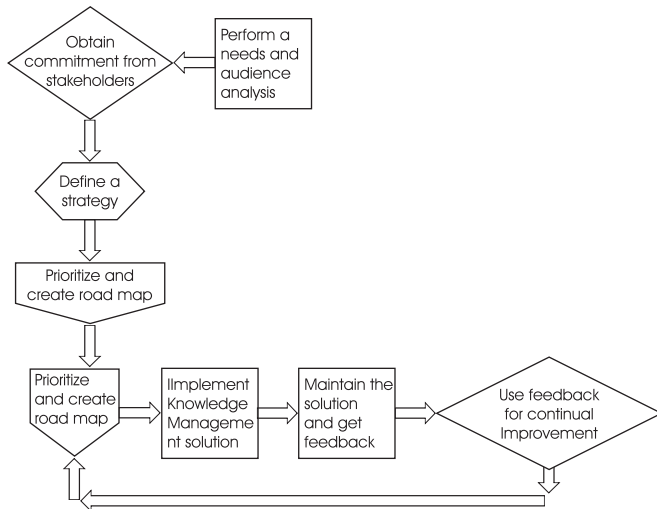


Figure 6: Knowledge Management Continuous Improvement Programme

Conclusion

Assessing the current state of Knowledge Management in a teacher training institution is an important step toward achieving the college's vision. Assessment is an iterative process that must be carried out at regular intervals of time. Teacher education institutions around the country, should

wake up to the fact that what they know more accurately, what individuals within these organizations know-is not only of immense value, but it is crucial to their success in this era in which information is a primary product.

The great end of Knowledge is not knowledge but action.
Thomas Henry Huxley

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