Knowledge Management, Human Resource Management, and Higher Education: A Theoretical Model

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Much has been written on the importance of knowledge management, the challenges facing organizations, and the important human resource management activities involved in assuring the acquisition and transfer of knowledge. Higher business education plays an important role in preparing students to assume the knowledge management and human resource roles so necessary to organizations. The authors examined the relationship between knowledge management, human resource management, and typical knowledge learning goals of an accredited business education program. A theoretical model is presented, illustrating how these relationships might overlap. The model proposes a linkage between knowledge management tenets, human resource management activities in organizations, and Bloom’s Revised Taxonomy for planning and evaluating educational goals.

Keywords: higher education, human resource management, knowledge management

The management of knowledge has increasingly become a topic of interest in both business–industry and education circles. The processes through which organizations develop, organize, and share knowledge—knowledge management (KM)—can lead to a source of sustainable competitive advantage (Hatch & Dyer, 2004). The generation and availability of new and existing knowledge presents a tremendous challenge and opportunity to organizations attempting to compete in a global arena. Human resource managers are challenged to meet the ever-increasing demands of a technologically driven environment. Educational institutions are equally challenged to keep pace with changes in the global business environment as well as the increased demands of stakeholders for accountability. Examining the relationships between KM, human resource management (HRM) activities, and university business program goals may lead to a better understanding of ways to prepare graduates to assume roles in the business environments as well as give university programs a good way to measure assurance of learning.

The purpose of this paper is to identify relationships between organizational processes, human resource activities, and KM activities. Additionally, the knowledge dimensions proposed by the revised version of Bloom’s Taxonomy are used to demonstrate how knowledge as imparted and measured in higher education might compare to KM in organizations (Anderson et al., 2001).

LITERATURE REVIEW

Knowledge Management

A review of the literature indicates that the field of KM has gained popularity in both the business and education arenas, and advances in information technology have served to assist in developing and implementing KM strategies. Serban and Luan (2002) cited five reasons for interest, emergence, and growth in the field of KM: (a) information overload and chaos, (b) information congestion, (c) information and skill segmentation and specialization, (d) workforce mobility and
turnover, and (e) competition. Having the ability to find needed information in a timely fashion without the necessity of being an expert in computer and information technology is a force driving organizations to become more effective and efficient in managing information. Workforce turnover and mobility have led organizations to appreciate the necessity of capturing, retaining, and sharing knowledge, skills, and abilities that may be lost with employee departures. Forecasting, planning, and adapting to change are essential for organizations to remain competitive. Therefore, continuous improvement via creativity and innovation becomes a competitive necessity. Identifying and classifying the knowledge bases essential to an organization’s ability to remain a viable competitive entity is necessary.

There are various ways of classifying knowledge. Tilak (2002) classified knowledge as being either popular—common sense knowledge acquired thorough experience—or erudite—education or research-based knowledge. Table 1 illustrates the distinction between explicit and tacit knowledge, another way to classify knowledge (Serban & Luan, 2002).

Steyn (2004) offered a reminder that there is a distinction between data, information, and knowledge, with knowledge being the action piece of the process. Knowledge leads to decision making and action plans. Knowledge is an intangible asset imbedded in individual workers in organizations. Tacit knowledge can become explicit organizational knowledge with deliberate efforts on the part of management to encourage personal and professional growth of knowledge workers, to encourage sharing of knowledge and skills throughout the organization, and by developing a knowledge-sharing culture and environment in the organization (Steyn, 2003).

Hansen, Mors, and Lovas (2005) examined the three phases of knowledge sharing—deciding to seek knowledge, searching for knowledge, and transferring knowledge—on the part of human assets in various social network settings. Specifically, interactions among and within teams vary in terms of decisions to seek knowledge, incur search costs, and incur transfer (sharing) costs. Perceived competition within and among teams, the phase level of knowledge sharing and the subsets of social networks impact the willingness for and success of knowledge sharing.

### TABLE 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Explicit and Tacit Knowledge</th>
</tr>
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<tbody>
<tr>
<td>Features</td>
<td></td>
</tr>
<tr>
<td>Codeified</td>
<td>Personal</td>
</tr>
<tr>
<td>Stored</td>
<td>Context-specific</td>
</tr>
<tr>
<td>Transferrable</td>
<td>Difficult to formulate</td>
</tr>
<tr>
<td>Transferable</td>
<td>Difficult to capture</td>
</tr>
<tr>
<td>Mobility</td>
<td>communicate, share</td>
</tr>
<tr>
<td>Sources</td>
<td></td>
</tr>
<tr>
<td>Manuals</td>
<td>Informal business processes &amp; communications</td>
</tr>
<tr>
<td>Policies, procedures</td>
<td>Personal experiences</td>
</tr>
<tr>
<td>Databases, reports</td>
<td>Historical understanding</td>
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Human Resource Management and Knowledge Management

Several studies have examined the relationship between effective HRM and effective KM strategies. For example, Lin and Kuo (2007) found HRM strategies to have a direct and significant impact on organizational learning and KM capability. Another study noted two different approaches to HRM strategies—exploitative and explorative—and the resulting impact on KM (Edvardsson, 2008). The exploitative HRM strategy, with a greater emphasis on explicit knowledge, tends to result in information technology (IT) solutions to KM whereas an explorative HRM strategy, placing a greater emphasis on tacit knowledge, tends to result in increased knowledge transfer, increased innovation, and organizational learning. An integration of the two HRM strategies is suggested for a more effective KM strategy. Shih and Chiang (2005) further suggested that firms using a cost leadership strategy would tend more toward a codified KM strategy whereas firms pursing a differentiation strategy would lean more toward a personalized KM strategy. Organizational competitive strategies, KM strategies, and HRM strategies seem to be linked in an important way.

In a study by Hatch and Dyer (2004), it was shown that effective management of certain human resource activities such as selection and development can improve a firm’s overall performance. Additionally, firms that emphasize human capital development have employees that are more productive and cost effective. Hatch and Dyer concluded that “in short, superior learning performance comes from better human resources and from better practices to develop firm-specific human capital and deploy it to learning activities” (p. 1173). It appears that organizations utilize various approaches for developing KM strategies geared toward HRM, placing emphasis either on information technology or human resources (HR).

Haesli and Boxall (2005) examined KM approaches using the IT solution, which involves the codification of knowledge and is used to capture explicit knowledge, and the HR solution, relying more on a resource-based view of implementing effective HRM strategies to capture tacit knowledge. Haesli and Boxall suggest that these two approaches should not be viewed as mutually exclusive but rather should complement each other. Additionally, the importance of a supportive organizational environment and culture should not be overlooked.

The creation of an environment conducive to knowledge sharing requires the consideration of both sociopsychological factors and people management practices (Cabrera & Cabrera, 2005). Organizations are urged to consider how to continuously renovate knowledge assets by building an environment supportive of KM, promoting positive attitudes toward knowledge sharing, and establishing an organizational culture for sharing knowledge. Work design, selection, and training; orientation and socialization programs; performance appraisal and reward and compensation systems; an
open, trusting culture; and careful selection of information technology are offered as practices for fostering effective KM. O’Neill and Adya (2007) suggested that increasing employees’ willingness to share knowledge may very well depend on the perceived equity of rewards associated with knowledge sharing. Successful cultivation of a knowledge-sharing environment also requires an understanding of the important cultural values of individuals and the organization. These cultural values can determine willingness to cultivate knowledge sharing behaviors (Kok, 2006). It should be noted, also, that cultural values tend to vary between, and even within, countries.

International Knowledge Management

Organizations must utilize effective HR policies and KM practices if they are to be able to integrate knowledge and skills from expatriates. If the knowledge and skills gained from international assignments are to be integrated into the storehouse of a firm’s knowledge and capabilities, effective HR and KM practices are required. Additionally, successful repatriation HR strategies support job satisfaction, attachment to the organization, and a willingness to share international experiences (Stevens, Oddon, Furuya, Bird, & Mendenhall, 2006). Another study identified three sets of human-related factors that determine successful knowledge transfer from international assignees: abilities and motivation levels of local employees, abilities and motivation levels of international staff, and relationships between local and international staff (Bonache & Zarraga-Oberty, 2008). Another study suggested viewing HRM strategies as an integrated system of interdependent practices to facilitate knowledge transfer in multinational organizations (Minbaeva, 2005).

Higher Education and Knowledge Management

In an attempt to establish and assess learning goals in an accredited college of business, some universities have adopted models proposed by experts in the field. For example, Candy (2000) advocated the use of Boyer’s (1990) fourfold division of academic work—scholarship of discovery, scholarship of application, scholarship of integration, and scholarship of teaching—as possible criteria for considering desirable attributes of graduates and academics. Recognizing the realities that individuals live in an information society, work in knowledge-based workplaces, and value knowledge workers, academic communities should be viewed as knowledge-based organizations involved in the process of developing knowledge workers.

Santo (2005) agreed with Candy (2000), insisting that we are in an era of the knowledge organization in which generating, sharing, and storing knowledge are imperatives for organizational cultures. Santo regretfully noted, however, that educational institutions are among the last to implement KM principles and programs and suggested that academic cultures need to shift from knowledge hoarding to knowledge sharing. The accumulation and sharing of both explicit and tacit knowledge can improve organizational and educational outcomes. Effective KM strategies within a university can increase its ability to serve internal and external stakeholders.

Effective KM can also increase a university’s ability to become involved in regional economic development, as demonstrated by efforts of European universities to intensify their regional engagement roles (Charles, 2006). Universities tend to play a major economic role in the communities they serve—as employers, as sources of technological know-how, and as a source of human capital development for individuals and businesses. Viewing knowledge as a development factor can be beneficial to universities and the communities they serve via the establishment of a regional competitive advantage. As a matter of fact, the rare, valuable, and difficult to imitate intangibles of human capital may well be the main source of a sustainable competitive advantage in the future (Moss, Kubacki, Hersh, & Gunn, 2007). Developing human capital within a university and preparing students to enter learning situations of organizations in the external environment may well be the highest mandates for higher education.

Preparing students to succeed in a knowledge-based economy requires an integrated educational environment that encourages creativity and a commitment to lifelong learning. Educational institutions are challenged to prepare students to compete in a knowledge society made more complicated by globalization. This challenge requires universities to be in a constant state of evolution, investigating, analyzing, predicting, and responding to opportunities and threats resulting from knowledge creation (Stukalina, 2008). We propose that Bloom’s Taxonomy could be a valuable tool in meeting the challenges of an ever-changing environment and preparing students to assume roles as important human assets in a knowledge-based economy (Anderson et al., 2001).

As cited previously in the literature review, effective KM and HRM strategies can be essential to creating and maintaining a competitive advantage for organizations. Additionally, research has indicated that universities aiming to meet the demands of an ever-changing environment should take note of the needs of organizations to develop effective KM and HRM strategies. Bloom’s Taxonomy could provide the link for developing effective KM and HRM in organizations and effective design and implementation of curricula in universities.

Bloom’s Taxonomy has long been recognized as a practical reference for classifying, writing and measuring student learning objectives (Bloom, Englehart, Farst, Walker, & Krathwohl, 1956). Purportedly, student learning objectives reflect the knowledge, skills, and abilities educational institutions wish to impart to students. The revision of the original Bloom’s Taxonomy itemizes four major types of knowledge educational institutions may want to impart to students and six cognitive process dimensions related to each knowledge dimension. Table 2 depicts the major types of knowledge and...
TABLE 2
Bloom’s Revised Taxonomy of Educational Objectives

<table>
<thead>
<tr>
<th>Knowledge dimension</th>
<th>Cognitive Process Dimension</th>
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<tbody>
<tr>
<td>Factual knowledge</td>
<td>1 Remember</td>
</tr>
<tr>
<td>Conceptual knowledge</td>
<td>2 Understand</td>
</tr>
<tr>
<td>Procedural knowledge</td>
<td>3 Apply</td>
</tr>
<tr>
<td>Metacognitive knowledge</td>
<td>4 Analyze</td>
</tr>
<tr>
<td></td>
<td>5 Evaluate</td>
</tr>
<tr>
<td></td>
<td>6 Create</td>
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</tbody>
</table>

If, indeed, universities, specifically, colleges of business, use a tool such as the revised Bloom’s Taxonomy and the corresponding knowledge dimensions to provide evidence of assurance of student learning, can these same dimensions be correlated with an organization’s attempts to implement KM programs? It would seem logical that university learning and knowledge goals should somehow correspond with KM goals of organizations that hire our graduates.

KNOWLEDGE MANAGEMENT, HUMAN RESOURCE MANAGEMENT, HIGHER EDUCATION, AND BLOOM’S REVISED TAXONOMY—A PROPOSED MODEL

It would be helpful for faculty and staff to become very familiar with Bloom’s Revised Taxonomy before adopting it for use. A more detailed (but abbreviated) breakdown of the knowledge dimensions represented in Table 2 with the following examples (Anderson et al., 2001).

1. Factual knowledge: basic elements students must know to be acquainted with a discipline or solve problems in it
   a. Knowledge of terminology
   b. Knowledge of specific details and elements
2. Conceptual knowledge: the interrelationships among the basic elements within a larger structure that enable them to function together
   a. Knowledge of classifications and categories
   b. Knowledge of principles and generalizations
   c. Knowledge of theories, models, and structures
3. Procedural knowledge: how to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods
   a. Knowledge of subject-specific skills and algorithms
   b. Knowledge of subject specific techniques and methods
   c. Knowledge of criteria for determining when to use appropriate procedures
4. Metacognitive knowledge
   a. Strategic knowledge
   b. Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge
   c. Self-knowledge

A model incorporating KM targets, HRM activities, and Bloom’s knowledge dimensions could be helpful to colleges of business seeking to coordinate assurance of learning activities. Figure 1 represents the proposed relationship between knowledge dimensions of HR activities, KM program targets, and the knowledge dimensions of Bloom’s Revised Taxonomy.

Recognizing the relationship between KM programs, HRM activities, and educational knowledge dimensions can benefit both business organizations and universities. The resulting integration of curriculum in universities should benefit students and the organizations that hire them. Bloom’s Taxonomy can provide guidelines for writing learning objectives, measuring student learning, and ultimately assessing program success.

MODEL DISCUSSION

Beginning with the HRM activities of strategic human resource planning, recruiting, and selecting, it may be assumed...
that organizations are specifically targeting general business and industry knowledge as well as specific area and task knowledge with regard to HR. Generally, this involves explicit KM targets. Universities using Bloom’s Revised Taxonomy would be interested in developing educational programs and majors while setting and measuring student learning objectives relative to the factual, conceptual, procedural, and metacognitive knowledge needed for students to acquire the knowledge sought by organizations.

HRM activities involving orientation, socialization, training, and development, as well as performance appraisals, would target tacit knowledge (e.g., organizational mission, goals, culture, specific jobs) as well as increases in explicit and general business and industry knowledge. Realizing that knowledge needed by human resources to successfully progress through their careers in organizations requires a commitment to continuous learning, university curricula need to provide students with opportunities to acquire, explore, and apply advanced and in-depth factual, conceptual, procedural, and metacognitive knowledge and tools to increase and improve their knowledge dimensions beyond graduation.

Finally, the HR activities involving rewards, outplacement, succession planning, and terminations cause organizations to be concerned about retaining and replacing knowledge workers. Designing reward and compensation systems to include monetary and nonmonetary, tangible and intangible, and intrinsic and extrinsic rewards is a necessary ingredient of maximizing the development and administrative goals of performance appraisal systems to maintain and improve knowledge workers. Both tacit and explicit knowledge is targeted for examination, improvement, and rewards. Terminations, outplacement, and succession planning HR activities require strategies to capture and retain knowledge housed in departing human resources. Managers need to be equipped with metacognitive knowledge that includes strategic knowledge, conditional and contextual knowledge about cognitive tasks, and knowledge of self to appropriately deal with potential knowledge gaps—in their organizations and in themselves. Business educational programs, therefore, necessarily need to focus on cognition in addition to other knowledge dimensions in designing and assessing programs/student learning goals.

CONCLUSIONS AND IMPLICATIONS

Organizations—business and educational—must focus on creating and developing knowledge workers that can succeed and excel in a competitive, global environment. Therefore, HRM activities and program and curricula development activities must focus on instilling, improving, and evaluating knowledge, skills, and abilities of human assets. Business organizations must identify the knowledge dimensions necessary to create and sustain a competitive advantage, as educational institutions must identify the corresponding knowledge dimensions necessary to provide quality instructional programs that develop students into knowledge workers. Additionally, both types of organizations need people committed to lifelong learning in order to sustain and improve their knowledge bases.

The interface between what businesses need and what business programs at universities provide may best be illustrated by the knowledge targets of both. By focusing on the knowledge dimensions of factual, conceptual, procedural, and metacognitive knowledge as measured by the process dimensions from remembering, understanding, applying, evaluating, and creating, business programs are likely providing business organizations with the knowledge workers they need as well as providing a tangible means for measuring assurance of learning in the students they produce.

Limitations

The model proposed in this paper is a conceptual work and has not yet been formally tested. However, the university of one of the coauthors has recently begun implementation of an assurance of learning plan that does indeed use Bloom’s Revised Taxonomy as a planning and assessment tool. Additionally, copies of the knowledge dimensions and cognitive process dimensions from this taxonomy are placed on the walls of each classroom in the Business & Technology Center, re-enforcing the intent to build a learning culture that incorporates these dimensions. There has been extensive involvement of members of the Business Advisory Council in the identification of learning goals and strategies in an attempt to incorporate the realities of external business stakeholders in the planning and assessing of curricula. It is anticipated that KM dimensions may be incorporated into planning goals and assessment tools. All business courses are presently being examined to see what, if any, changes need to be made in content and presentation. A detailed examination of the Business Core was completed during the Fall 2009 semester.

Recommendations

Before the benefits of a model that incorporates KM, HRM, and Bloom’s Revised Taxonomy can be fully assessed, results from the university included in this study and other universities need to be gathered and analyzed. We recommend, and expect to see, HRM courses to be especially focused on the three model elements.

Regardless of whether Bloom’s Taxonomy is used for planning and assessment purposes, we urge universities to recognize the importance of incorporating KM tenets into the business curriculum. These tenets seem to correspond well to the human resource asset management concepts in organizations.
REFERENCES


