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# **An Analytical Study of the Prospects & Challenges of Applying Knowledge Management Practices in Educational Institutions**

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**ABSTRACT:** *Knowledge is an important factor in current global environment and business competitiveness. It is also considered to be the highly valuable asset for an organization in future. Moreover, knowledge is a kind of intangible and it is difficult to measure and transfer. Therefore, management of knowledge becomes an important issue, and knowledge becomes a key factor for success of a firm. Consequently, evaluating the performance of Knowledge Management is becoming increasingly significant, as it fosters strategic organizational learning and provides the solutions to become competitive and introduces the capabilities required to meet customer needs.*

*Most of the respondents agreed on the importance of knowledge management. Different people from various departments gave their input and helped in understanding the current flaws of the system in education, and also provided some valuable suggestions regarding use of knowledge management for improvement of system and standard of education.*

**Keywords:** knowledge Management, education standers, capabilities, and organizational learning.

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Education in Pakistan has been growing over the last ten years and it has grown substantially enough to be considered and declared as an industry, the Education Industry. Many a factors have contributed to this growth. First thing to mention is the growing trend of higher education among the general public. Secondly the role of the government has been very supporting to promote privately owned educational institutions to cope up the pressures of growing demand in higher education.

Over the last ten to fifteen years huge investments have been made in the private sector educational institutions, ranging from Primary schooling, high schools to colleges and Universities. According to the Ministry of Education, the total number of educational institutions in the country currently operating is 227,243. The overall student enrolled is estimated as 34.49 million with a total teaching staff of 1.27 million. The investment trend in the Education sector in terms of GDP has been 2.50 % and 2.47 % in the years 2006-07 and 2007-8 respectively whereas it is expected to be 2.10 % during the 2008-09. This growth has of course benefited the masses in many ways, as the quality of education has improved as compared to the Public sector facilities. On the other hand this growing number of educational institutions has also created an environment of competition as more and more schools, colleges and universities are trying hard to attract students for economic benefits and survival.

Education industry in Pakistan has become very competitive and strives to improve the standard of education as well as to add value to their services. In the search of innovative solutions to cater the problems of current students and to make them more competitive for the complex job markets, educational institutions are pursuing new technologies and strategies for their benefit. In this context the concepts and practices of Knowledge Management are becoming popular day by day. The basic question arises that, “can we apply the concepts of Knowledge Management to colleges and Universities”? This research is targeted to answer the same question.

### **Research Background**

The concept of knowledge management (KM) has grown and gained importance in the field of commerce. In today's competitive environment, organizations strive to leap ahead in the marketplace. Commitment to best practices and excellence is most important for today's managers. The supporters of people and knowledge management use terms like “customer services” and “customer satisfaction” as a proof of benchmarks of excellence.

The increased focus on KM motivates businesses to introduce new philosophies and implement various KM technologies. New roles and jobs have emerged like the chief knowledge officer and knowledge workers (Sherif, 2006). However, Most of the prior studies on knowledge management missed the focus on understanding how organizations can organise and integrate various pieces of knowledge to promote innovation and excellence (Sherif K. 2006).

KM is important because knowledge can serve as a key strategic resource creating long-term distinctive competency for the firm. KM describes the approaches, tools and techniques for acquiring, transforming, applying, storing and protecting knowledge to improve firms' competitiveness (Hsiu-Fen, 2007).

Knowledge reflects a firm's intellectual capital and intangible asset base: including work experience, expertise, know-how, intuition, ideas and understandings that can be learned shared. KM involves integration of individuals and groups within a firm and among various firms managing knowledge to make better decisions, and deliver results to support the intended business strategy (Horwitch and Armacost, 2002).

“Knowledge applications involve the use of the knowledge for job related problems. Applying knowledge practices can improve employee satisfaction and can add value to business. Knowledge storage and preservation is the key to protect the intellectuality, creativity, intuition, wisdom and interests of those who possess knowledge. If firms cannot stop inappropriate utilization of knowledge, they will definitely lose their competitive advantage” (Hsiu-Fen, 2007).

Much of the literature on KM indicates that social and technical support is key to knowledge sharing (Lin and Lee, 2006). For example, social interactions play important role in promoting knowledge sharing. A deeper understanding of tacit knowledge must be obtained for organizations to allocate resources of tacit knowledge. Understanding the difficulties of tacit knowledge could serve as a means for such deeper understanding (Herrgard, 2000).

This research was conducted to understand the term knowledge management. To have a macro view of the situation, the author examined the current role of knowledge management performance in education sector found in literature. To have the micro view, the author searched the issues associated with chances of implementation of knowledge management practices in education institutions.

A through reading of all available literature on knowledge management is practically not possible for one researcher due to the wide scope of the field, but in the following a brief review of some of the knowledge management performances has been presented.

“Everybody talks about knowledge management, but how it can be used and how it can be successfully applied it?”. This question surfaced in a practical problem faced by many organizations, seeking to understand and apply knowledge management for their business (Greiner et al., 2007).

Some scholars have attempted to produce evidence showing a well-managed and systematic investment in staff training and utilization is essential to organization's performance and productivity (Acemoglu and Pischke, 1999). However, with reference to continuous improvement in performance, KM initiatives have ended up in mixed successes, to the limit that many companies has been avoiding the use of the idea of “knowledge management”, replacing it with “benchmarks”, “best practices”, or even replacing the word “knowledge” with “insights” to eliminate the ambiguity that surrounds the concept (Cooper and Beesley, 2008).

Despite the strong initiative and active dedication toward better knowledge management practices, organizations are still confused over finding effective implementation of KM (Kim et al., 2007). Firstly, an appropriate framework for evaluating the current status of KM is still missing, resulting in doubts over the basic concept itself and its importance. Secondly, organizations are not willing to implement KM strategies and tools according to their specific needs and situations, because of the limited amount of accumulated research available on conditions of KM. Thirdly, many organizations have been unable to produce reasonable organizational return from their KM initiatives.

The InformationWeek survey showed that 94 percent of companies considered that knowledge management is important to their business in the long run” yet according to the report, half of the KM initiatives fail; some claim the failure rate as high as 70 percent” (Call, 2005).

Another important international survey by Reuters identified that 90% of the firms adopting Knowledge Management solutions benefited as their decision making improves. Eighty percent claimed that KM resulted in increased productivity (Marwick, 2001). Some 92% of the respondents reported that they have worked in knowledge-intensive organizations, though only 6% of the organizations were titled as ‘very effective’ in managing knowledge to improve business

performance and outcomes. Moreover, the amount of money spent on employee training and information technology, it is amazing, but not surprising, that 87% of the surveyed organizations still suffer from costly errors or mistakes due to the best available knowledge not being accessible at the right time and/or place. 37% of all organizations have no knowledge management goals and 17% were unknown.

A major conclusion of (above mentioned) research study by Reuters concluded that organizations do acknowledge the importance of generating, managing and sharing knowledge, but still a lot of work needs to be done on improving the ability to translate their competitive needs into workable sustainable organizational strategies. While knowledge management systems have been advancing over the years, most applications are still prearranged as searchable databases containing huge collections of explicit knowledge (Sasson and Douglas, 2006).

However, the KM performance is steadily gaining significance. It is becoming increasingly important to answer the question of how to evaluate a firm's performance regarding KM. On the other hand, most of the measures, metrics and methods of knowledge measurement developed over time, are being used to measure the knowledge existing in the organization, which makes their effectiveness poor because the most important job of KM performance measurement is to compare a firm with its main competitors (Yieh et al., 2007). Although body of theory relating to KM is growing, yet there are relatively few knowledge management texts and materials that make an explicit link between knowledge and performance (Kalling, 2003).

### **Applying Knowledge Management in the Education Sector**

Adopting knowledge management tools and methodologies for the education sector can be as beneficial as it has been proved to be for the corporate sector. Effective planning and implementation of KM can result in better decision-making capabilities, effective product development (for example, course content development and research), better academics and administrative activities, better utilization of campus facilities such as class rooms, science labs and library etc. and reduced costs. A broad institution-wide initiative for knowledge management can lead to consistent improvements in sharing knowledge—both explicit and tacit— and the resulting potential benefits (Kidwell and Johnson, 2000)

Relying on personal and institutional knowledge of unique individuals can reduce the flexibility, adoptability and responsiveness of any organization. The challenge is to transform the information that currently possessed by those individuals and disseminate it to other faculty members, staff person, or other constituents. Educational institutions from Schools and colleges to universities in various parts of the world have significant potential to apply knowledge management practices to support every part of their strategies and mission. Knowledge management should not strike the education institutions as a radically new idea.

Knowledge Management practices can be very effective for the education sector as KM can be a critical enabler of quality improvement and innovation in educational institutions. With focus on collaborative teaching and learning, and with the support of knowledge base of various disciplines, the educational effectiveness can be enhanced. Knowledge Management, for education, needs to be preserved, maintained, and crystallized.

This study used a wide-ranging literature review to build propositions for applying knowledge management concepts and practices the education sector. The second contribution is the derivation of empirical support for proposition prediction using data from actual respondents. The empirical evidence from this study proves that knowledge management practices can be successfully adopted at any institution. There can be found more complex difficulties in implementation of KM practices due to many problems identified through questionnaires and views of the respondents.

Ideally applying Knowledge Management practices effectively will be helpful in identifying and understanding the dynamic requirements of students and academic staff. These concepts will help to develop standard of performance in the educational institutions and will help to improve in future. Knowledge management concepts and practices will enable the institutions to develop a system of continuous improvement in all areas.

The concepts of Knowledge management can be applied to areas like:

- Campus management
- Faculty management
- Utilization of physical resources such as labs, Library, class rooms and computer labs
- Financial planning for future terms/sessions
- Hiring and training of teachers

- Planning for student co-curricular and extracurricular activities like visits, seminars, workshop, functions and sports etc
- Curriculum designing
- Planning for admissions
- Planning for new programs
- Enrolment and Registration of students
- Examination system
- Technology improvement decisions

Knowledge management if applied effectively on any educational institution can prove to be beneficial in Many ways. In fact, it can become the most important source of competitive advantage for future.

### **Major Challenges in Implementing Knowledge Management Practices**

Through Questionnaire results and Data analysis, it is identified that there are several factors acting as hurdles in successful implementation of KM, which are discussed as follows:

1. Many respondents are of the view that both the Management and the staff members are not aware of the true benefits of KM in present situation. That is one of the main hurdles in implementing KM practices.
2. According to many of respondents the biggest hurdle in implementation of KM is lack of commitment of top management. KM implementation requires investments in system improvements and technology enhancement. An important requirement for KM is adopting computerization and use of information technology tools, data base management tools, data sharing and communication supports and sophisticated software and hardware support. All these technologies are very expensive and require a strong will and commitment of top management, as they are responsible for decisions related to resource allocation and budgets.
3. Many staff members claimed that lack of willingness to share information with others is another hurdle for KM implementation.
4. According to the results culture of education institution is another hurdle in KM implementation as people, policies and trends does not support sharing of information and cooperation among different departments. The staff members believe that information sharing and KM is responsibility of few people from the administration and everybody else in not allowed participating in sharing of knowledge.

5. A high percentage of respondents responded that the main problem is poor coordination among various departments. Poor coordination among departments is a result of poor knowledge sharing and lack of trust among members of departments. This factor may affect performance as poor coordination is a major cause of inefficiency, poor decision making, delays in important tasks, increased expenses and reduced performance of individuals and groups.
6. Another important problem identified through response of staff members is information overload, which means there is too much useless information going around, and the institution is unable to analyze available information, synthesize, and convert it into useful data.
7. Some respondents say that poor sharing of knowledge is another problem, which directly relates to implementation of KM practices.
7. Top management needs to show full and consistent commitment towards implementation of KM. This would require higher ratio of resources allocation and more budgets for KM tools and system.
8. Education institutions should invest in Human resources to develop a motivated and talented workforce both in academic and administrative domains.
9. Employee reward system must be introduced for participants of KM system, this would encourage sharing of knowledge among staff.
10. Top management should promote a culture of trust, information sharing, empowerment and coordination so that staff members consider this a part of their job to share what ever knowledge they gain.
11. Institutions should recognize knowledge as an asset base and take steps to retain experienced and talented staff members and to reduce the employee turnover ratio. This would help in reducing the negative effects of crucial employees leaving the job.
12. Top management should focus on improving efforts to promote social interactions and networking among staff members including administrative personnel and teachers. Increased opportunities for social interactions and meeting will allow people to share their personal experiences with others allowing juniors to learn from experienced staff members.

### Recommendations

Based on the above conclusions number of important recommendations are available for successful implementation of KM practices. Many of these are derived from the data collected through the questionnaire used for this research. Most of these recommendations are based on the problems identified in the education institutions and will provide a framework for future improvements.

1. There is an essential need to promote awareness about the significance of KM and benefits of applying it, among all staff members. Special KM Training workshops and information seminars can be designed for both administrative and academic staff.
2. An enthusiastic effort is required to develop an affective Human Resource policy, so that staff members are hired on merit and properly trained keeping in view the requirements of KM practices.
3. Properly qualified IT staff must be hired and trained accordingly, so that KM practices are successfully implemented.
4. The institution must update their current technology to allow safe, secure, accurate, and fast collection, analysis, processing, dissemination, and storage of information within and outside the college.
5. Proper IT tools including hardware and software can improve the chances of implementation of KM practices.
6. In order to streamline KM concepts along with the other departments, a separate department can be developed for Knowledge collection, sharing, and management. This can help in effective coordination among various activities.

### Study Design and Methodology:

**Sample and Procedure:** The population of the present study is the employees of private sector educational organizations. A total of 65 structured questionnaires are randomly distributed among the above mentioned randomly selected organizations. Out of 65 questionnaires 50 are returned. The response rate is 76.9 %.

**Respondent's Characteristics:** The sample consists of 68% male and 32% female. 16% of the employs are in the age group of 20-30 years. 66% are in the age category of 31-40years. While 16% are in 41-50 years age group.16% respondents have work experience of 2-3 years.24% have work experience of 3-4 years. While 52% have work experience of 5 years or more

**Table 1: Sample Characteristics**

Selected Dimensions		n	%
Age	20-30 years	8	16.0
	31-40years	33	66.0
	41-50years	8	16.0
	<51years	1	2.0
Gender	Male	34	68.0
	Female	16	32.0
Experience in Field	> 1 year	1	2.0
	1-2 years	3	6.0
	2-3 years	8	16.0
	3-4 years	12	24.0
	<5 years	26	52.0
Type of Educational Organization	Public	20	40.0
	Private	30	60.0
Job Nature	Academic	30	60.0
	Administration	20	40.0
	Total	50	100.0

**Measures:**

**Table 2: Variables of Study**

Variables	Mean	Std. Deviation
<b>Status of KM in Institutions</b>		
What is current status of KM	2.02	1.270
Is KM asset base for institution	2.44	.644
What do institution think of KM	2.06	1.236
Stored knowledge in Institutions	2.44	.733
KM practice successful in Institutions	1.78	.954
<b>Hurdles in effective Implementation</b>		
Attitude of senior management for KM	2.72	1.051
Biggest hurdle in Applying KM	2.40	1.414
Problems by Institutions in using IT	2.56	1.606
problem in effective implementation	2.82	1.190

Knowledge Management practices is measured on the following two major factors, one is the status of KM practices which was measured by the eight measures ( $\alpha=.533$ ).and second is hurdles in the implementation of

KM practices which was measured by six measures ( $\alpha=.632$ ). Measured the simple hypothesis of Km practices and Job nature are independent.

**Table-3: Observed and Expected Counts of Two Factors, KM Practices Successful VS Job Nature and Chi-square Test of Independence.**

		Job nature		Total	Chi-sq test	Value	D.f	Sig.
		Academic	Admin.					
KM-practices successful	Yes	11 (17.4)	18 (11.6)	29	Pearson chi-sq	14.144	2	.001
	No	3 (1.8)	0 (1.2)	3				
	Can't say	16 (10.8)	2 (7.2)	18	Linear by linear Association	12.325	1	.000
Total		30	20	50				

Pearson's Chi square statistic or Likelihood ratio used to test the independence of job nature and implementation of KM practices. In this case its value is near 0 thus there is some relationship between job nature and the implementation of KM practices, they are associated. Observed values of the cells shows that the Administrative nature of job is more emphases on KM practices than respondents belong to academic jobs.

**Data reduction – Factor Analysis:** Factor analysis was applied to reduce data. Table 2 shows overall detail of the variables chosen for study. No variable was eliminated. Thus, for 14 of outcomes of Current status and Hurdles in implementation, a total of 6 iterations were performed for communalities and rotated components matrices. The number of eliminated items came to 5. Therefore, 9 items with higher factor loadings carried out forward for further statistical analysis. The coefficient of Kaiser –Mayer - Olkin (KMO) against all latent variables were more than 0.5 (i.e. Minimum=.563and Maximum=.776). Bartlett's Coefficient against all latent variables was found significant at  $p=.002$

**Table-4: Summery of Factor Analysis and Test of Assumptions of Factor Analysis – Kaiser-Mayer – Olkin and Bartlett's Coefficient**

Variables	Total Items (C, RM <sup>2</sup> )	Items Eliminated	Items Remain (RM <sup>2</sup> )	Iteration	K M O <sup>e</sup>	Bartlett <sup>d</sup> X <sup>2</sup>	d.f	Sig.
Current Status of KM in Education	8	3	5	3	.776	89.151	28	.000*
Hurdles Related to Implementation of KM	6	2	4	4	.563	35.277	15	.002*
Total	14	5	9	7				

Note: C=Communalities, RM=Rotation Matrix, KMO=Kaiser-Meyer-Olkin Measure of Sampling Adequacy, Bartlett's Test of Sphericity.

The factors having higher loads existed in the variables Status and Hurdles in effective implementation of KM practices. Table 3 shows that these variables have 9 items with higher loads accounted for by the components in the factor solution was above, 50. According to rotation sum of squared loadings, components collectively explain more than 50% of the variance. Regarding variable of status of KM practices, items eliminated were "Which one of the following strategy educational institutions used for KM". "What are the problems currently faced by institutions". "Which technologies have in situations implemented".

For the variables of hurdles in the effective implementation of knowledge management, items eliminated were "How much time it takes for an employee to get the relevant Knowledge in institutions". "Which of the following best describe institutions culture about Knowledge Management".

**Table-5: Factor Loadings - Status and Hurdles in Effective Implementation of KM Practices**

Applying Knowledge Management Practices <sup>a</sup>	Extraction <sup>b</sup>	Component <sup>c</sup>			Rotation Sum of Squared Loadings Cumulative
		1	2	3	
<b>Status of KM in education</b>					
Current status of KM	.662		.824		57.792
Is KM asset base for institution	.622	.770			
What do institution think of KM	.718	.729			
Stored knowledge in Institutions	.550		.746		
KM practice successful in institutions	.673		.607		
<b>Hurdles related to implementation of KM</b>					
Attitude of senior management for KM	.653	.759			70.039
Biggest hurdle in Applying KM	.741	.819			
Problems by Institutions in using IT	.854			.924	
problem in effective implementation	.707		.806		

Note: Initial Value of All the Items is 1.00, Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization

## Conclusion

Education institutions including schools, colleges, and universities have significant opportunities to apply knowledge management practices to improve and support all aspects of their system, from academics to administration to research. Knowledge management should not be considered as a new idea; rather, it is a new spin on their current system. But implementing knowledge management practices with its true spirit is a lesson that the smartest organizations in the corporate sector are learning all over again. Conclusion sustained the research objectives while answering the research questions that educational institutions do believe in the role of job nature in the effective implementation of Knowledge management practices.

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