

A Model for the Design Information Education Programs: Kuwait University as a Case Study

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Abstract: There have been pervasive changes in the information and knowledge market at the global level. These changes are related to ICT applications, information management activities, archive and record management, digitization, networking, and knowledge applications. Corporate organizations have been at the forefront in assimilating new systems and application. However, empirical research conducted in a large number of corporate companies in Kuwait has indicated that employers are generally dissatisfied with the competencies of the professional workforce being produced in the higher education institutions, and there is a need for developing new initiatives for the design of appropriate information and knowledge management education programs. This paper proposes a model for the design of information and knowledge education programs that has been tested using the case study of Kuwait. In order to test the model, the pertinent body of research conducted during the last five years has been reviewed. Based on this review and analyses, important findings have been presented about the existing corporate market, ICT applications, and information and knowledge systems and services. Further, a list of competencies has been defined that need to be developed amount the graduates of information study programs. Strategies for the development of undergraduate and graduate programs have also been proposed.

Key words: Kuwait, Knowledge Management, Information Management,

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Introduction

Market Changes

Library and information education has undergone fundamental changes in its structure, content and conduct. New areas of studies have emerged in the field. Changes can be noted in the identity and nomenclature of the names of library and information schools and degree programs. Also, a great deal of diversity is found in the spread and scope of degree programs, academic cores, tracks of specialization, and curricular content. (Rehamn, 2002; Rubin, 2007) These changes are profound, pervasive, and universal.

Academics and professionals in the field of library and information science (LIS) agree that the information market needs a new breed of professionals who possess relevant capabilities and competencies in today's changed context. TEPL has completed crucial surveys of the market and identified how the field has opened new opportunities in the areas of information and knowledge management. (TFPL, 1999). Abell (1998) emphasizes that professionals need to possess new roles and competencies for these emerging roles. Morton (1996), based on a survey of the graduates of seven Canadian schools, found that the nature of the work these professionals performed had changed. Junzic and Badovinac (2005) analyzed the comparative situation of ten European schools and noted that these schools presented divers situations, yet there were changes in the thrust and content of their programs.

New Areas of Studies

The field of information has new domains of studies in the areas of information science, information management (IM), information architecture, information organization, ICT applications for networking and portals, digitization, digital library initiatives, and knowledge management (KM). New areas of specialization have been added to the traditional discipline of LIS, and almost all operations and services are being approached from new perspectives and with new technology. While LIS programs have addressed the demands of changes in LIS, many of them have opened new avenues where they are targeting the general information market. This has resulted in new degree programs, having a great deal of diversity. LIS, since 1980s, has traditionally been active in information management and has added these competencies to its

curricula. Loughridge (1999) noted that LIS schools were dealing with new situations, though information professionals did not clearly conceive differences in librarianship, information management, information resource management, and knowledge management, Oxbrow & Abell (2002) and Southon & Todd (2001) reached similar conclusions about the treatment of IM and KM in professional ranks. It has been realized that there exists a common denominator in these distinct areas in which information professionals can play an effective role. Koenig (1999) provided a checklist of KM areas that could be better taught in the LIS environment. Henczel (2004) discussed the changes happening in the workplace for information professionals, and proposed sets of knowledge, skills and personal attributes as these relate to the possible contributions of these professionals for their emerging roles, responsibilities, and rights in the KM era. Conolly and Matarazzo (1999) asserted that the shared collective knowledge of an organization was creating new values, and that corporate information professionals were now charged with the mission of exploring and implementing new, innovative methods to encourage sharing, and to better manage information.

Competency Studies

Researchers have been analyzing the needs of the information market in order to configure the desired competencies of information professionals, which could provide new directions for academic programs and curricula for library and information science. Academic and professional bodies, such as the Special Libraries Association, Medical Library Association,, and Association for Library and Information Science Education have been engaged in surveys to assess the extent to which current curricula offer the kind of training students need to develop their knowledge, understanding and skills. (Taylor, 1998), Using a competency framework, Rehman (2003) proposed a model of curriculum development, taking into account the input of employers, professionals and academics. A number of studies have used the competency model to identify curriculum content for general professionals and those who are working in specialized domains of academic, public and special libraries. (Rehamn, Baker & Majid, 1998; Rehman, Baker & Majid, 1998a; Rehman, Majid & Baker, 1997; Rehman, Majid & Baker, 1998; Rehman, Majid & Baker, 1998b; & Rehman, Majid & Baker, 1999). Work on competency definition and validation is mostly

done through surveys, expert judgments, and analysis of employer perceptions in the job market. In this context, a large number of studies have been reported that deal with the perceptions and insights of professionals, employers, and graduates of LIS programs.

Studies about Perceptions

Perceptions of students and alumni of LIS programs deal with a number of factors related to curricula, faculty, resources and facilities. A number of perception-based surveys are found in the literature. (Blankson-Hemans & Hibbered, 2004; Edomi & Ogbomo, 2001; Ngah & Edzan, 2004; Genoni, Exon & Farrelly, 2000; Genoni & Smith, 2005; Jefferson & Contreras, 2005; Loughridge & Speight; 1996; Moahi, 1999; and Yen, et al., 2003) These studies point to the significance of the views of employers, stakeholders, academics, and graduates of LIS programs about different aspects of the design and direction of education programs. The findings of these studies provide insights into the market situation and the demands it might have for the professional workforce.

The following points of significance can be derived from a review of the afore-cited studies:

- 1 - Changes in the information market are pervasive.
- 2 - LIS education has undergone major changes during the last few decades.
- 3 - New fields of study and areas of practice have influenced LIS education programs. These have an inter-disciplinary nature.
- 4 - Academic LIS programs are re-configured in the light of market needs, based on fresh attempts at competency definition and validation.
- 5 - Competencies are defined on the basis of market needs' assessment, the demands of the employment market, the situation and profile of the academic programs, and the perception of graduates and other stake-holders.
- 6 - Academic LIS programs need to be rejuvenated and redesigned, based on continuous attempts at strategic planning, implementation, and evaluation.

Problem

It is understood that the challenge of change is apparent in LIS programs and curricula. A change needs to be responsive to market

needs. A number of factors contribute to the definition of market needs that include employer perception, alumni surveys, and an assessment of the needs of other stakeholders. Competency definition becomes the basis of the efforts of module development and curricula design. The role of each segment in redesigning academic programs and curricula is generally recognized. However, there exists a need that these dynamics should be presented in the form of a model that is systematically examined and validated, using the available body of evidence in context. A viable model may provide useful insights to all those who are spearheading the change process in LIS schools.

Purpose and Limitations

In order to test the validity of the proposed model, rigorous data collection and analysis are required for different segments of the model. However, the research and data may never be as comprehensively available for any given situation at a particular point in space or time. The practical approach would be that studies of different variables, available in the literature, are taken into consideration. Also, research and data collection focusing on one or a number of variables needs to be taken into consideration. This way, over a period of time, a credible body of evidence can be accumulated that can be factored in.

Using this approach, the writers have focused on the situation of one Gulf country, Kuwait, so as to examine and apply the available evidence to this model. Fortunately, a large number of studies have been conducted about Kuwait's corporate market, information and knowledge management activities, employer expectations and perceptions, alumni surveys, competency studies, review of information study curricula, and the overall environmental situation of the country during the last 3 to 4 years. The purpose of this paper is to analyze this body of research, which was conducted to find out how this might lead to the design of new IM and KM programs. However, insufficient evidence is available about the last three ingredients of the model related to development, implementation, and evaluation. However, the writers have been able to propose a number of strategic understandings about these aspects. Also, abundant research has been found, and evidence about market analysis and competencies has been studied, as compared to the sketchy treatment of other variables. Nonetheless this testing of the

model might be treated as preliminary and tentative. However, its usefulness and value cannot be over-emphasized.

Procedures

The following procedures were used for this exercise of model development and validation of this model:

- 1 - Developing a conceptual framework for changes in academic programs, development of new areas, analyses of market needs in consideration of the attendant factors, competency definition and validation, and redesign of programs. A review of the relevant literature was used to develop this conceptual frame.
- 2 - A model for the design and redesign of education programs is proposed.
- 3 - The Kuwaiti context was selected to test this model. A number of studies have been conducted during the last 3 to 4 years that address different segments of the model in this region.
- 4 - A strategic understanding of the viable application of this model has been proposed. The limitations of the available evidence have also been spelled out.

Proposed Model

1 - Attributes of the Model

Based on the available review of studies, a model for the design of education programs is proposed. The model is presented in Figure 1. The model stipulates that the design of education programs is based on the following:

- 1 - An assessment of market needs should be made.
- 2 - Market assessment should be followed by a review of the situation and capabilities of the academic programs.
- 3 - A systematic attempt competency definition should provide for the basis of the design of the curricula and academic programs.
- 4 - Academic programs need to be developed, implemented, and evaluated systematically. The model is cyclic and continuous in nature.

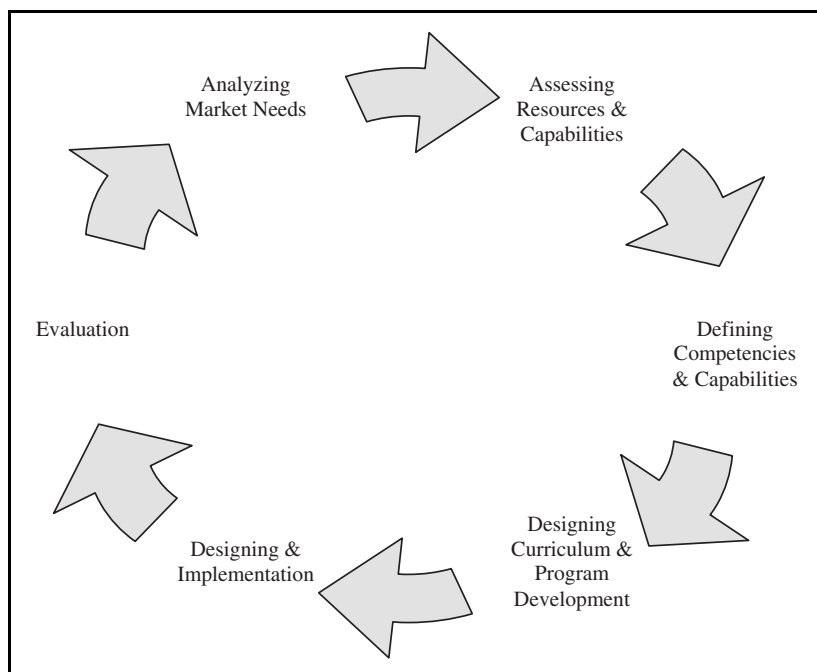


Figure 1: Model for the Design of Education Programs

2 - Assessment of Market Needs

Figure 2 provides a view of the strategies that are employed for assessing market needs. These include a number of pertinent factors. The employment market is the most credible barometer. For this purpose, the environment needs to be scanned by surveying information and knowledge operations and activities, the ICT infrastructure, and employer perceptions. National policies present significant pointers to the changing market. These are related to socio-political, legal, economic, political, education, media, S&T, R&D, and human resource policies. These have both long-term and short-term implications for the needs of information and knowledge professionals. Another important variable is related to graduates of the academic programs. Alumni perceptions about ground realities and their insights about emerging needs are most pertinent in this review process. Also, there is a need for stock-taking of the opportunities of education and training in the higher education and vocational education programs in any given situation.

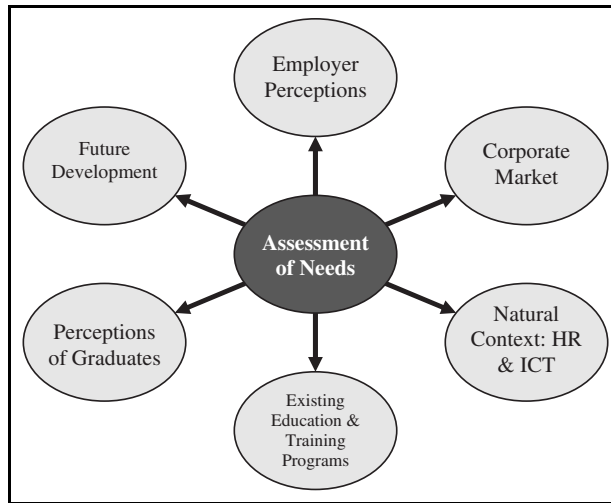


Figure 2: Assessment of Market Needs

3 - Competency Definition

Figure 3 provides a graphic view of the important sources of information used in the process of defining competencies. These include surveys of the employment market, task analysis resulting in data banks, input from experts in the field, and using modular approaches in the identification process. Competencies need to be appropriately validated in order to serve as the essential framework for the design of education programs and curricula.

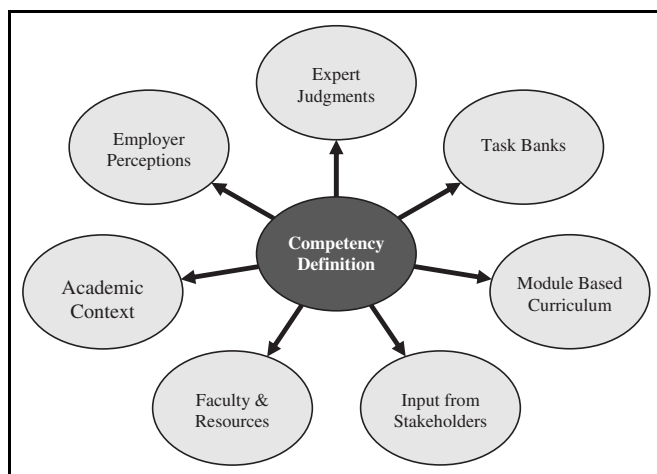


Figure 3: Competency Definition

4. Areas of Competencies for Information and Knowledge Management

Figure 4 gives an overview of the areas in which information and knowledge management competencies need to be defined. Since these areas have the most significant influence on LIS education, LIS educators need to have a critical view of these areas which are related to the apparent needs of the emerging employment market. A careful review would help LIS educators to have a clear focus on the desired competencies, which can be translated into efforts of curriculum and programs redesign.

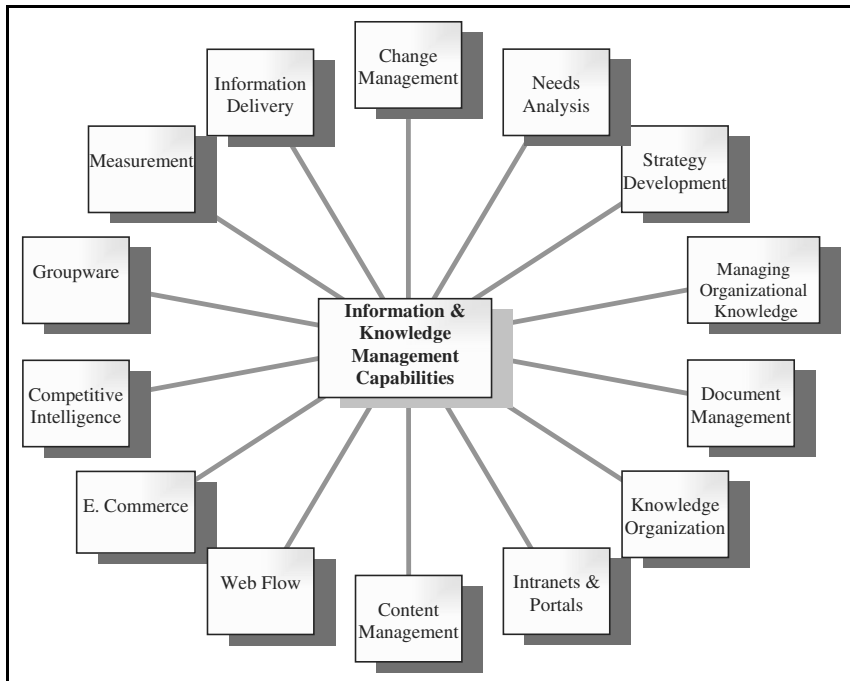


Figure 4: Competency of Information and Knowledge Management

Application of the Model in the Case of Kuwait

According to the model, the design of educational programs depends on the assessment of market needs. Factors that contribute to examining market needs include an analysis of the employment market, perceptions of professionals about the ground realities of the employment market, the availability of existing programs of education and

training, and overall national policies dealing with ICT, information, media, education, S&T, research, and human resource development. When viewed in a holistic manner, these may provide a general understanding of the needs.

The model has been applied in the case of Kuwait where pertinent factors have been attempted to be analyzed with a realistic assessment of the needs of information and knowledge education.

Step One Assessing Needs

As shown in Figure 2, needs may be examined from a multitude of vantage points, some of which are discussed here.

1 - Kuwaiti Corporate Market

In this model, it is apparent that competency definition is based on a number of factors that include market analysis, alumni perception, overall national policies, and the national context. In Kuwait, a number of studies have been conducted by the researchers about IT operations, information management activities, organizational context, human resource management aspects, and related aspects of information and knowledge management. Rehman & Marouf (2003) analyzed the information management activities and IT operations of 41 Kuwaiti corporate companies. In a follow-up study, Rehman, (2003a) analyzed the organizational and human resource aspects of Kuwait's corporate sector. A focused analysis of the information management applications of 17 Kuwaiti financial companies was conducted quite recently. (Rehman, 2005; Rehman, 2006; and Rehman, 2006a). The findings of the three studies about the Kuwaiti corporate world have brought forth some vital understanding that indicated prevalent market needs and trends. These can be summarized as follows:

- 1 - Kuwaiti companies have extensive IT and information applications. Their systems use state-of-the art hardware, software, and networking applications. Most of them are profoundly engaged in housekeeping, database and document management, communication, and networking activities.
- 2 - Turnkey systems are used in most places. Large organizations have developed in-house systems. Outsourcing is commonly practiced for Web-based utilities and services, database management, and document management systems.

- 3 - The use of external information resources and systems is not widely practiced. Most companies have no subscription to external databases.
- 4 - Most companies do not have elaborate facilities for the management of organizational archives and records.
- 5 - These companies lack policies and practices for the organization of their internal information sources, An apparent weakness has been noted in indexing, archiving, warehousing, and retrieval systems.
- 6 - Most companies do not have dynamic Web sites, Few have development portals, though many have Intranet systems in place. Most companies outsource these activities.
- 7 - Most companies do not engage in e-commerce initiatives because these do not have the needed systems and resources.
- 8 - One area in which employers wish to have qualified professionals is data and system security, encryption, firewalls, and other measures of transaction protection.
- 9 - Many companies are investing in the continuing development of their IT and information professionals. However, lower level professionals do not benefit from outside training programs.
- 10 - Most companies prefer to employ expatriate professionals. They have expressed reservations about the competence of Kuwait professionals.
- 11 - Almost none of these companies have an information center. Also, they do not have information specialists or information managers on their rolls.
- 12 - These companies have no active liaison with Kuwait University for the education and training of their professionals. They feel least involved in the academic and research activities in the higher education institutions. Their perceptions about the competence of Kuwaiti graduates are low.

2 - Perceptions of Graduates about Market Realities

In the preceding section, employer perceptions and needs in the corporate market have been examined. Another significant measure is to view the perceptions of graduates of the information study program who face the ground realities of the market. For this purpose, an extensive study of graduates of the MLIS program of Kuwait University was conducted between 1996 and 2006. (Rahman, Marouf & Al-Ajmi, 2006;

and Rahman & Marouf, 2007). In This study, perceptions about coursework, faculty, instructional methods, instructional facilities, fieldwork, comprehensive examinations, and research components were analyzed. These preliminary findings can be summarized as follows:

- 1 - Graduates were most satisfied with faculty members and core courses.
- 2 - Graduates were least satisfied with fieldwork and the conduct of comprehensive examination.
- 3 - Graduate wished that new names and labels may be used for degrees and programs.
- 4 - Graduates identified many new areas of ICT, information management, and knowledge management in which coursework and tracks of specialization need to be introduced in the degree programs.
- 5 - The need for stronger collaboration with the corporate market was emphasized.

3 - Additional Factors

National policies are reflected in a variety of ways. These are general in nature and provide an insight into the existing situation. Kuwait has liberal and progressive information and media policies and the infusion of ICT in both the public and private sector is all pervasive. Being a highly literate society, the needs of the citizenry for information resources and services are distinct. The research and development sector is somewhat inactive, and productivity and innovation do not post any significant achievements for the national economy. Human development policies emphasize the induction of Kuwaiti youth into the private sector, though their contribution is still low. Demographically, the number of expatriates outnumbers the Kuwaiti nationals. Politically, Kuwait is the most open and engaging society in the region. The thriving economy is petroleum-based, without much diversity. Private entrepreneurship is most aggressive in the service sector. The industrial base is weak and narrow. Culturally, society is the crossroads of traditional tribal leanings and urbanized extravaganza. Affluence and abundance have shaped the socio-cultural value of society. Socially, people belong to the vastness and wilderness of the desert, with a firm faith in Islamic beliefs and practices, facing the paradox of transition from their nomadic origins into a high-tech cellular existence. This general profile, typical of most

nations in the Gulf region, has a great bearing on the way information and knowledge education programs need to be conceived.

Since the early days of its existence, Kuwait has had one higher education institution, i.e. Kuwait University, and one vocational institution, PAEET. Kuwait University has had a profound effect on the development of Kuwaiti society. During the last few years, a change in public policies has allowed the establishment of a number of private institutions of higher education, and many of them have outside affiliations. Kuwait University has a number of programs in information and knowledge domains, including library and information science, information systems, computer science, computer engineering, communication, education, etc. Rehman (2000) examined the curricula of a number of Kuwait University programs to find out if these had been responding to the needs of the expanding domain of information studies. It was noted that the MLIS program of the university appeared to include a number of such ingredients in its coursework.

The new schools mostly offer undergraduate programs in business, ICT and other professional domains. So far none of these institutions had proposed any program of coursework that is related to information and knowledge management applications. It appears plausible that the situation in other countries in the region may not be much different. When Different elements of the market needs are examined together, a few general points may be derived:

- 1 - The corporate sector has a strong need to employ information and knowledge professionals.
- 2 - The higher education institutions do not offer any viable programs of information and knowledge management that meet the needs of the market.
- 3 - There are certain areas of information and knowledge management, such as information and knowledge organization, content management, retrieval, Web applications, e-commerce, and e-government, in which these countries need to employ a large number of professionals.
- 4 - Employers lack confidence in the capabilities of locally-produced, indigenous, human resources.
- 5 - Academic programs on campuses do not have inter-disciplinary engagements.

- 6 - New programs in information and knowledge management need to be developed, or new tracks of specializations need to be added to the existing programs.

Step 2 Assessing Resources and Capabilities

After assessing the needs, it is prudent that objective stock is taken of the available resources and capabilities. Faculty members are the most critical resource in all the stages of conception, design, conduct, delivery, and review. Space, laboratories, computing facilities, and human and administrative resources have to be ensured before launching a program. The nature and thrust of the academic program will dictate the extent of the resources. An information management program will be IT-intensive, while a KM program may require little in that area.

Inter-disciplinary collaboration and creating partnerships with the market are additional capabilities. Isolated academic programs are most vulnerable, both politically and administratively. And engaging interaction with enterprises brings resources, richness and diversity to the programs.

Step 3 Defining Competencies

The next step is defining competencies for which the academic programs and curricula are to be designed. This is a crucial step both for the designing of new programs and the redesigning of existing programs. The effort needs to be systematic and thorough. Figure3 shows possible sources for obtaining input for competency definition. In a situation, one school may use a single source or a multitude of sources. Griffiths and King (1983), the pioneers of competency definition in the field of library and information sciences, developed an enormous data bank of tasks to be used for different operations and work settings. Such data are too minute for any meaningful grouping. These also require an enormous commitment of human and financial resources. Task-data can easily become outmoded with changes to systems, technology, and processes. Rehman, Majid & Abu Baker (1999) found little use for this approach, and used a modular approach for the validation of competencies, based on the input of professionals and experts, gathered through interview-based surveys. The use of surveys for defining and validating competencies is commonplace. It is always useful to benefit from the findings of earlier studies. However, it is always desirable to validate

them in the context of a particular setting. Rehman (2003) presented a model for defining these competencies in the international context. Rehman, Al-Ansari & Yousef (2002) made methodological improvements by defining module-based validation in an international study. In another study, Rehman, Abdul Karim & Chaudhry (1998) noted that competency definition led to a clear understanding that undergraduate and graduate competencies could be differentiated. Employer perception and expectation have always been held in the highest esteem in the process of competency definition and validation.

The new disciplines of information and knowledge management have brought new avenues and challenges for academics in the traditional domain of LIS education. Rehman and Chaudhry (2005) have reviewed the perceptions of the heads of LIS departments on which KM competencies LIS programs offered to their students. Chaudhry and Higgins (2003) described level of courses, areas and topics, and differences in emphasis in the instruction of KM courses. Lau and Al-Hawadeh (2002) reviewed the need for designing KM curriculum at graduate level. Al-Hawamdeh (2005) examined the interdisciplinary nature of KM and assessed the need for a multidisciplinary approach in designing graduate programs. Rehman (2006), based on an extensive review, presented a profile of the core competencies for information and knowledge management for LIS professionals. Based on the preceding discussions, vital competency modules have been identified that need to be considered if any graduate program of information and knowledge management is being designed. These are presented in figure 4 and consist of the following:

- 1 - Development of information/knowledge resources: development information resources, the creation and recreation of organizational knowledge; developing archives, document systems, records, repositories, organizational memories, collection of best practices, and publishing systems and instruments.
- 2 - Information /Knowledge organization: indexing, warehousing, organizing metadata, info maps, and knowledge maps, and creating organizational systems, taxonomies, ontologism, etc.
- 3 - Content management: digitization, portal management, managing content systems in various media and formats, retrieval systems, information architecture.

- 4 - Use and user behaviors: determining needs, marketing strategies, man-machine interfaces, etc.
- 5 - Information dissemination and knowledge sharing: policies and strategies, creating sharing context and environment, organizational communities of practice.
- 6 - Social capital and social networking: creating human and social networks.
- 7 - System, tools and technology: technology used for databases, document management, portal management, and content management.
- 8 - Learning organization: developing dynamic and responsive organizations.
- 9 - Management: corporate framework, leadership, motivation, human resource development, change management.
- 10 - Data and system security.
- 11 - E-commerce.
- 12 - Competitive intelligence.

Steps 4-6 Development, Implementation and Evaluation

These steps require a great deal of planning and careful execution. This paper has focused on competency content and cannot have any in-depth treatment of these aspects. However, a multi-pronged strategic approach is needed if higher education institution in the region plan to produce graduates who can be fittingly employed in the corporate market in the information and knowledge domains. The following are some of the strategic points that need to be taken into consideration:

- 1 - There exists a strong need to develop information and knowledge management programs in higher education institutions that might cater of the specialized needs of the corporate sector.
- 2 - Initiatives for developing IM and KM programs need to be made at both the undergraduate and graduate levels. Rehman, Abdul and Chaudhry (1998) established that academic programs for information studies need to be designed in a manner so that these are mutually complementary. They also listed competencies for which undergraduate programs appeared to be more appropriate. A large number of undergraduates may serve in entry-level professional positions or vocational or technical tasks. For this purpose, these academic programs need to be carefully and thoughtfully designed.

Rehman and Marouf (2003), based on their review of the North American model of information studies at the undergraduate level, proposed specific guidelines for developing undergraduate programs. Graduate programs, on the other hand, need to satisfy the needs of professionals who have to be employed for professional and managerial positions. Diverse approaches are needed for developing these programs.

- 3 - Another vital strategic consideration is that information and knowledge management education is multidisciplinary in nature. Information systems, human resource departments, IT and computing departments, organizational behavior, information science, and a number of other disciplines contribute to the development of these programs. It means that strong inter-disciplinary collaboration needs to be managed for launching them. Academic politics and turf issues always cause serious sensitivities in the process.
- 4 - These programs require that strong collaboration is cultivated with business and industry. These are the sources for exposing students to ground realities in the real world and providing opportunities for fieldwork, projects, and internships.
- 5 - The schools need to develop faculty and other resources in order to offer these initiatives. These programs require that while curricula are expanded, faculty members should also come from diverse backgrounds. LIS faculty members who have been living in their comfort zones of traditional identity are not very receptive to such changes of identity and substance.
- 6 - Schools need to develop traditions of inquiry and research. Graduate students should be involved in applied research in organizations.

Conclusion

A model has been proposed for the designing or redesigning of academic programs in LIS schools. In order to apply this model in a given context, it is pertinent that systematic reviews are conducted about market needs. A number of factors have also been delineated that help to articulate them. It requires the commitment of substantial resources in order to reach a clear understanding about market needs. Competency definition is the next logical step in the process. Again, this exercise needs to be conducted with imagination and ingenuity. Over-generalizing from

the available findings may not serve the purpose. It should be done by keeping in mind local needs and the stock-taking of resources.

The design of academic programs is essentially a political process. It needs to be initiated by faculty members through engagement, deliberation and consensus building. It is quite a complex process. Working with other forums of academic decision-making is also quite a daunting task. Bureaucratic steps and procedures vary from place to place, but it is always through active lobbying and diligent persuasion that any meaningful change can be tracked.

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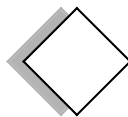
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نموذج (Model) مقترح لتصميم برامج تعليم علوم المعلومات: دراسة حالة جامعة الكويت

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ملخص: كان هناك الكثير من التغيرات في سوق العمل في مجالات المعلومات والمعرفة بدولة الكويت، وهي تغيرات لها علاقة بتطبيقات تكنولوجيا الاتصال والمعلومات، وأنشطة إدارة المعلومات، وإدارة الأرشيف والسجلات، والرقمنة، وتطبيقات إدارة المعرفة. وقد أشارت الدراسات والبحوث التي تمت على قطاع الشركات والمؤسسات في الكويت إلى عدم الرضا فيها عن كفايات خريجي مؤسسات التعليم العالي ومهاراتهم، ولذا فإن هناك حاجة واضحة لمبادرات جديدة لتصميم برامج تعليمية مناسبة في مجالات المعلومات وإدارة المعرفة. وتعد هذه الدراسة مراجعة علمية تحليلية لمجموعة الدراسات والبحوث التي تمت في هذا المجال خلال السنوات الخمس الأخيرة لتقدم أهم النتائج حول الوضع الحالي لحاجات سوق العمل من خريجي هذه المجالات، وتحليلاً وتعريفاً للكفايات والمهارات المطلوبة، والتي يجب أن تطور لدى خريجي البرامج التعليمية في مجالات المعلومات والمعرفة. وكذلك الإستراتيجيات المقترحة اتباعها من أجل هذا التطوير، وتصميم برامج تعليم وعلوم المعلومات والمعرفة في مؤسسات التعليم العالي. تقترح الدراسة (Modle) أيضاً نموذجاً.

المصطلحات الأساسية: الكويت، إدارة المعرفة، إدارة المعلومات، تعليم المعلومات.

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