ABSTRACT

Knowledge Management (KM) is being adapted in almost every sector or discipline including public and private organizations. As useful in other sectors, it can be helpful in education sector. In the literature, though use of KM in education is documented or proposed to considerable extent, little work has been done, in particular, regarding applying KM for curriculum development.

The present research focuses on identifying components of a good curriculum and a curriculum development process; generalizing the process of curriculum development; developing a framework; determining a practical detailed approach to apply KM for curriculum development, its validation; and demonstrating the proposed KM framework.

The research approach adapted to achieve the objectives stated above is as follows:

- Applications of KM in various sectors / fields were studied through literature review.
- KM frameworks proposed in various fields and for various processes were analysed and their applicability to curriculum development process was determined through analogies.
- Components of good curriculum were identified by studying good curricula from various institutions and model curricula prescribed by various academic bodies.
- Details of various curriculum development processes and models for Curriculum Development were identified through literature review and their relative merits were studied. The curriculum development process identified is represented as steps in six phases.
- A generic KM framework for curriculum development process was developed along with a questionnaire to validate this framework. This questionnaire was used for a pilot survey to solicit opinions of experts on the proposed KM. A major comment of the experts was that it is too technical. Based on the responses, an application oriented framework that
can be understood by curriculum developers with non-IT background also was developed. This framework is represented as a collection of seven sub-frameworks.

- The previous framework was modified to suggest guidelines for implementing the application oriented framework.
- The proposed framework (set of seven frameworks) was validated using survey method through questionnaires and interviews with curriculum experts. The experts included Heads of Departments and Deans of various disciplines, Professors, Associate Professors from various institutions/Universities. Initially, it has become difficult to identify such highly qualified experts having considerable experience in curriculum development and interest in responding to the questionnaire. Hence, through referral network (Donald R. Cooper et al, 2012), the experts were selected using Snowball Sampling method.
- Sixty percent of the questionnaires were completed by the respondents in the presence of the researcher. It was a good experience as the queries of the respondents while filling up the questionnaires were satisfactorily answered. Other questionnaires were received in person, by post and through e-mail.
- Data obtained through the questionnaire was analysed and the components of the framework were evaluated in terms of Importance Quotients of the components. These quotients reflect the opinion of the experts.

The proposed KM framework for curriculum development, its components and subcomponents were supported by the experts by giving high importance value as clear from Importance Quotient being high. Thus the framework can form basis for implementing a knowledge management system for curriculum development process.

The framework identifies inputs for the system in the form of sources of knowledge along with the nature of knowledge to be extracted from these sources. The output generated in each phase of the curriculum development process is explicitly specified in the framework of each phase itself, which will be useful for developing the curriculum. This was supported by experts by giving high importance, with importance quotient above 80%.
The proposed framework suggests an effective way to store knowledge by detailing the nature of repositories. The knowledge repositories will contain information regarding curricula of various institutions, modularized contents and subject matter, references of books, journals, web resources, assessment methodologies, teaching and learning methodologies, question banks, various institutional documents, reports, files, databases, expert profiles, knowledge maps, concept maps, analysed stakeholders’ feedbacks, cases with lessons learned etc. The sources of knowledge identified for curriculum development process are teachers, subject experts, professional experts, alumni, students, employers, statutory councils and accrediting bodies.

Use of this proposed framework for building a KM system for curriculum development will reduce time, effort and cost of curriculum development. It will improve the quality in terms of effectiveness and usefulness of the curriculum and associated educational programme. It will help in increasing the speed of curriculum revision and in introducing new curricula to keep pace with professional requirements and new technologies. The curriculum developers will not have to restart from scratch for designing curriculum because of availability of previous work in the system such as previous experiences, research, lessons learned and some required subject matter. This will avoid repetition of work. It will facilitate interdisciplinary curriculum design because of availability and accessibility of required information from other disciplines.

The framework proposed in this research is generic. It supports minimum requirements of a curriculum development process. It can be customized for curriculum development for particular discipline by identifying knowledge that need to be maintained for that discipline, considering sources of that knowledge. The framework can be extended to support more features by seeking tacit knowledge from curriculum experts that they use while developing curriculum. An efficient IT based KM system for curriculum development can be built by using this framework which the researcher intends to pursue.