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The research paper on "Role of knowledgebase system in higher education"- A conceptual study

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Abstract
The role of knowledgebase
The knowledge is very important factor in any system now a days. The use of Knowledge for decision making and processing of Information are main factors in Computer Science area. The above paper highlights on how we can use knowledgebase concepts to education field. Mainly to higher education sector in which the career of youth is shaped. The Information generation, storing and retrieval for further use requires various algorithms, programs and it requires good logic to design such systems. We can formulate best system for Higher education sector which will use domain knowledge of various functions of Educational Institutes. The main process of teaching and learning at higher education are studied by the researcher for the research problem undertaken in resent society the education is very important area where the best citizens can be made.
The main aim of this paper is to study the application areas of knowledgebase system for higher education, formulate the system, design the rules and implement this system for any function of the higher education sector.

Keywords: Information, knowledge, knowledgebase, TQM, higher education, teaching and learning

1. Introduction
Information allows us to expand our knowledge beyond the range of our senses. We can capture data in information, then move it about so that other people can access it at different times.
See you from where they are to know what you look like.

1.2 Knowledge
Think of this as the map of the World we build inside our brains. Like a physical map, it helps us know *where* things are – but it contains more than that. It also contains our beliefs and expectations. It is from this "map" that we base our decisions, not the real world itself. Our brains constantly update this map from the signals coming through our eyes, ears, nose, mouth and skin. You can't currently store knowledge in anything other than a brain, because a brain connects it all together. Everything is inter-connected in the brain. Computers are not artificial brains. They don't understand what they are processing, and can't make independent decisions based upon what you tell them.

1.3 Knowledge base
A knowledge base is a special kind of database for knowledge management. A knowledge base provides a means for information to be collected, organized, shared, searched and utilized. Knowledge bases are essentially closed or open information repositories and can be categorized under three main headings: Machine-readable knowledge bases, Human-readable knowledge bases, Hypertext Systems
Knowledge-based systems Knowledge based systems are artificial intelligent tools working in a narrow domain to provide intelligent decisions with justification. Knowledge is acquired and represented using various knowledge representation techniques rules, frames and scripts. The basic advantages offered by such system are documentation of knowledge, intelligent decision support, self learning, reasoning and explanation.
Knowledge-based systems are systems based on the methods and techniques of Artificial Intelligence. Their core components are:

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- knowledge base
- acquisition mechanisms
- inference mechanisms

2. The Means of knowledge based system

The knowledgebase system is useful to store important knowledge related with teaching and learning process. The rule based system can be used to extract the important information related with higher education. The decisions of best teaching process and learning process can be found by this system. Researchers have given brief model of this system with sample rules to teaching and learning process of higher education. Following are the benefits of knowledge based system.

1) Use of knowledgebase to store experts knowledge
2) Use of rule based system
3) Internet applications for extracting knowledge.
4) Intranet facility for Organizations Knowledge
5) Mobile database handling through Expert System
6) Inference engine as Processing
7) Online Database Apps.
8) Web portals for knowledge storing

All above means are now common and are used by IT experts for business organization functions.

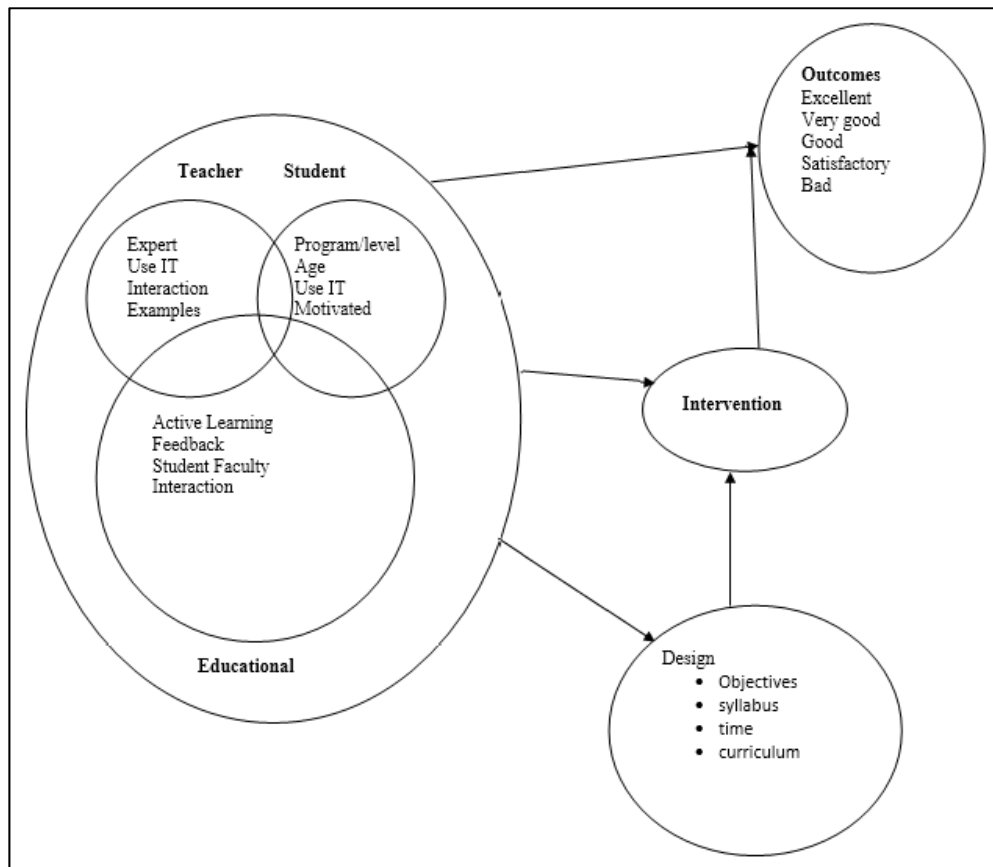## 3. The concept of rule based system
Rule Based System

A rule based system is a system whose knowledge base is expressed under the form of production rules. Rule-based system has been employed in many applications for decision making. Such systems can also be used for classification. The production rules can be inferred directly from the expertise or obtained through machine learning methods. In general, the rules are in the following form:

IF <antecedent conditions>
THEN <consequent conditions>

The antecedent conditions define the values or the value intervals for one or more input attributes. The consequent conditions define the values or the value intervals for one or more output attributes. In the case of classification, the consequent conditions determine if a given entity belongs to a class. In rule based system it is often necessary to deal with uncertainty.

3.1 Simulation model in Teaching and Learning Process

Fig 1.0

The above fig.(1.0) given represents the simulation model for teaching and learning process. This simulation model is developed on the basis of data presented by various students and teachers which are being used by various teachers and students in teaching and learning process. On the basis of entered data and the design objectives, syllabus, time and curriculum the outcome of simulation will be presented. The outcome of that simulation depends upon the teaching methodology used by the teachers and the learning methodology used by the students. The outcome of simulation model can be excellent, very good, good, satisfactory and bad. The simulation model is calculating all the teaching and learning process which is being used by teachers and students.

4. Barriers in knowledge based system

The Knowledgebase system requires very good hardware system, advanced operating system and large memory to store the information. Some of the major hurdles are as given below-

1) Advanced Hardware required
2) Increase in Memory size
3) Network Operating system
4) Open Source Software's
5) Availability of Computer Security programmes.

5. Future of knowledge based systems

The future of knowledge based system is very bright since number of installation are increasing in companies and theses system are having wide range of applications in Artificial Intelligence systems and decision making systems.

6. Conclusion

The paper cover in brief about conceptual discussion about knowledge based system with respect to higher education. The researchers have given practical example of teaching learning application of this system and data is presented to get results in terms of best method of teaching learning to higher educational sector. The Authors have done a decent contribution by creating the awareness about knowledgebase systems and its application. In future use of all theses technologies will be mandatory. The authors have plan to add more data to this research study in form of developing special knowledge system for higher education in future.

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