Complying Total Quality Management through ISO 9001 UPS Requirements and interpretations in Higher Educational Institutions

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Abstract:
The paper provides an interpretation of the ISO 9001 model for quality assurance in Higher Education. The objective is to prepare a framework for successful documentation and implementation of a quality system based on the ISO 9000 International Standards requirements in education based on customer’s satisfaction. The main objective is to inculcate quality system through UPS, ISO 9001 requirements that can be established in any department, faculty or university seeking explicit quality, i.e. providing confidence to customers that their requirements for quality are met. This paper study about the, overall improvement of quality through ISO 9001 certificate in Higher Education Institutions (HEIs). The paper explains about the ISO 9001 requirements along with UPS terms and ISO 9001 interpretations, with the higher education system. The findings from this paper definitely give a guideline in their endeavor to implement effective quality program in higher education institutions (HEIs).

Introduction:

Undoubtedly, the world of education is facing rapid changes today and will probably face even greater changes in the future. With the emerging communication technologies, such as the Internet, video-conferencing and satellite aided communication; distance education is becoming a reality not only in remote area, but across the world. The exclusive local university markets will soon cease to exist, and schools will have to both think and act globally in order to survive. So, how will universities assure prospective students and their future employers internationally of the quality of education provided? The manufacturing sector has already encountered a similar situation: fierce international competition, customers requiring world-class quality at a preferably low price, the necessity of keeping pace with leading-edge production and information technologies. Many organizations have found a part of the answer to these problems by the introduction of internationally accepted generic standards for quality assurance from the ISO 9001 series. Thousands of companies world-wide have achieved
registration and are now able to compete for international contracts. These ISO 9001 requirements are applicable to manufacturing and service organization systems approach. This paper will attempt to further discuss a quality system in education, and provide a framework for a systematic interpretation and a successful documentation/implementation of the most comprehensive standard through UPS terms for education; namely ISO 9001. This would provide confidence to employers, students and the general public that their requirements for quality education and research are met, and would make systematic quality efforts visible. TQM is an approach for continuously improving the quality of goods and services delivered through the participation of all levels and functions of the organization. TQM as the totally integrated effort for gaining competitive advantage by continuously improving every facet of ISO 9001. ISO 9001 series standards provide clear guidelines to improve the effectiveness of the educational system through TQM. ISO 9001 certification could measure the quality of services provided, especially through research and development for customer satisfaction, from the determination of customers’ requirements and needs, to the evaluation of whether these needs have been satisfied in TQM.

**UPS APPROACH**

Although the ISO 9001 standard is generic, i.e. it is applicable to manufacturing and service organizations, as well as health care, small business and education, a number of terms and concepts in the standard have manufacturing background. To assist us in the interpretation, the concept of the University Production System is introduced in the higher educational institutions. A summary of terms found in the UPS of ISO 9001 standard and explanations of these terms is about quality systems of educational systems. The University Production System (UPS) can be defined as a set of interdependent processes, such as teaching, learning and researching, and resources, including human, material and information that function harmoniously to achieve specified educational objectives. A quality system is defined as a set of interdependent processes that function harmoniously in an organization, using various resources, to achieve objectives related to quality. So by inculcating the UPS within quality system certain valuable objectives of TQM had been met. An objective related to quality is to meet and surpass customer needs and requirements. Another objective can be to create zero-defect products (an analysis of zero-defect products in the university environment). Processes within the quality system transform customer requirements (required output) into the product bearing the ability to satisfy the requirements (actual output).
This result in the valuable outcomes such as:

- student knowledge, abilities and competencies
- courses and programs
- research (new knowledge)

A summary of ISO 9001 UPS terms in higher educational institutions are given in Table 1

<table>
<thead>
<tr>
<th>TERM (ISO 9001)</th>
<th>Student knowledge</th>
<th>Program/courses</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
<td>Student knowledge, abilities, competencies</td>
<td>Program &amp; courses</td>
<td>New knowledge</td>
</tr>
<tr>
<td><strong>Customers</strong></td>
<td>Industry, community, alumni, professional organizations</td>
<td>Students, industry, community, professional organizations</td>
<td>Industry, research sponsors, other universities, community</td>
</tr>
<tr>
<td><strong>Supplier Subcontractor</strong></td>
<td>University/ faculty/ Department High schools, universities, community colleges</td>
<td>Professional institutions, other universities</td>
<td>Researchers, industry sponsors, literature sources (journals)</td>
</tr>
<tr>
<td><strong>Executive Management</strong></td>
<td>For a faculty: Dean, department heads and program directors;</td>
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<td></td>
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<tr>
<td></td>
<td>For a department: Head and associate heads</td>
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<tr>
<td><strong>Process Plan</strong></td>
<td>Individual student curriculum</td>
<td>Course outline (plan); Program plan</td>
<td>Research project plan</td>
</tr>
<tr>
<td><strong>Raw Material</strong></td>
<td>Student knowledge and comprehension of basic arts and sciences before entering the university</td>
<td>Existing material on courses and programs</td>
<td>Existing practical and theoretical knowledge</td>
</tr>
<tr>
<td>Value Adding to Material</td>
<td>Value adding to student's knowledge and abilities</td>
<td>Improvement in course design, delivery and Maintenance</td>
<td>Value adding to existing Knowledge</td>
</tr>
<tr>
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<tr>
<td>Manufacturing Process</td>
<td>Learning</td>
<td>Teaching</td>
<td>Researching</td>
</tr>
<tr>
<td>Lead Time</td>
<td>Time from enrollment to graduation</td>
<td>Programs: 4 or 5 years; Courses: 1 or 2 terms</td>
<td>Time from contract to Delivery</td>
</tr>
<tr>
<td>Part</td>
<td>Student knowledge accumulated in a course</td>
<td>Program: course; Course: lectures, labs, tutorials</td>
<td>A phase in a research project</td>
</tr>
<tr>
<td>Operation/Tool</td>
<td>'Learning opportunity' in labs, lectures</td>
<td>Teaching labs, lectures, tutorials</td>
<td>Work on a phase of a research project</td>
</tr>
<tr>
<td>Machine/Technology</td>
<td>Learning opportunity'</td>
<td>New knowledge</td>
<td>Research Opportunity'</td>
</tr>
<tr>
<td>Operator</td>
<td>Teacher and student</td>
<td>Teacher, teaching assistant</td>
<td>Researcher, research assistant</td>
</tr>
<tr>
<td>Part Specification</td>
<td>Course specification in the 'General Calendar'</td>
<td>Specification of deliverables in a research contract</td>
<td></td>
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</tbody>
</table>
| Quality Policy          | The overall quality intentions and direction of the faculty (department), as formally expressed by the dean (department head) |"
Quality Control | The operational techniques and activities used to fulfill the requirements for quality
Nonconformity | The non-fulfillment of specified requirements
| Student failure | Course, program failure | Research project


From this table the UPS terms are determining customer needs to customers’ evaluation, to know whether these needs have been met and the ability of the organization to meet them. This is the subject of the UPS terms of educational system of ISO 9001 requirement. From this all the resources must be trained to effectively use procured resources (Training faculties and students). The product subsequently goes through processing (Processing all over the knowledge of the students), inspection and testing (resulting of the student's outcome result), as well as handling and storage. Defective products are removed and corrective and preventive actions implemented (correcting all the errors of management and inculcating proper knowledge to the students) finally, delivering good results to satisfying the needs and wants of the customers (stakeholders, parents). From this certain important ISO 9001 requirements are made to know clearly about the higher educational institutions. Based on that, good implementation had been made. These ISO 9001 requirements can have potential benefits, with respect to identifying available options higher education institutions may choose from in order to respond to increasing external pressures for demonstrating academic output. The following are the important ISO 9000 requirements regarding the higher educational institutions:
The ISO 9000 requirements:

The Quality Management System (QMS):

The organization should establish, document, implement and maintain a QMS and continually improve its effectiveness in accordance with the requirements of this standard. ISO 9001 contends that there are two requirements in the QMS: general and documentation requirements. With regard to general requirements, ISO 9001 contains the concept of Deming's cycle of CI - Plan, Do, Check, Act (PDCA). PDCA cycle consists of the following steps: define, develop and document each process; implement documented procedure; monitor implemented procedure; and improve the procedure. Enhancing the effectiveness of QMS, training had been provided to the lecturers. It helps to improving the diploma and degree programs in research development. The QMS added that the work procedures were upgraded and courses concerning ISO 9001 in higher education. In this, the lecturers had put in serious efforts to complete their course file. In addition, many lectures had been sent overseas to further their studies for which a huge amount of money had been allocated to sponsor them. Many lectures were on study leave and, as a result, the lectures remaining had to work very hard to deliver teaching and learning activities. The QMS had been added the Faculty management had started to instigate a research culture among lectures and students. The quality objective of this is the Faculty's lecturers to acquire PhD qualification and having good knowledge to handle a subject with a huge number of students and also had to supervise a large number of final year projects. Finally,
this QMS, ISO 9001 requirement helps in achieving good quality objective in higher education for lecturers and students.

**Management Responsibility:** Top management should show its commitment to the QMS development and implementation and continually improve its effectiveness. The 'management responsibility' element comprises the requirements for developing and improving the quality system, listening to customers, formulating quality policy and planning and defining responsibilities, authorities and communication processes to facilitate effective quality management. The University's top management had definitely shown evidence of their responsibilities throughout ISO 9001 maintenance to ensure the staff to work in teams to accomplish any program. In connection with this, the management review meeting minutes indicated that all the Deans and the Heads of Centers should demonstrate serious commitment to ISO 9001 maintenance. The Faculty management has highlighted ISO 9001 issues at the Faculty and Department meetings. They added the issues of customer satisfaction in higher education had not been neglected. So that, the ISO 9001 supports maintenance activities such as Division of Corporate and Quality Management (DCQM), academic and non-academic staff maintenance could meet the customer satisfaction level. All these have been done by the support of top management. By top management, the academic and non-academic members satisfy the stake holders through the quality ISO 9001 requirement.

**Resource Management:** The organization should provide the resources required to implement and maintain the QMS and continually improve its effectiveness. This is also needed to enhance customer satisfaction by meeting customer requirements. 'Resource Management' comprises the requirements of both human and infrastructural management resources. Many resources had been allocated for ISO 9001 resource maintenance, such as a high conducive environment for working, new teaching and learning infrastructure. The University had experienced a lack of lecturers as many of them were on study leave. The management had tried to solve this problem by continuously conducting recruitment for new lecturers. Proper resources had to maintained in ISO 9001 maintenance such as laptops had been provided for every lecturer and fully equipped laboratories had been provided for teaching activities, good technicians to monitor the laboratories, good library resources, ICT facilities, tutorial rooms, adequate classrooms for students. By these proper allocation of resources all the needed ISO 9001 requirements had been satisfied.

**Product Realization:** The process needed for product realization should be planned and developed by the organization. The term product realization refers to the day-to-day productive business, whether they produce a tangible product or provide a service or combination of both.
To be specific, the 'product realization elements include identifying customer requirements, reviewing product requirements, communicating with customers, designing and developing products, purchasing, producing (and/or delivering) services and controlling measurement and monitoring devices. The ISO 9001 adopted good teaching techniques such as Outcome Based Education (OBE), improving academic program, department of technology was set up in every faculty to give more emphasis on practical knowledge for the student, advance packaging course, academic advisor system had been set to give academic consultation for students, new technologies methods such as education computer (EDUCOMP) board had to be setup.

**Measurement, Analysis and Improvement:** The requirements for monitoring information on customer satisfaction, measuring and monitoring products and processes and managing internal audits, non-conformity detection and improvement actions. Proper monitor should be done for quality ISO 9001 requirement. Organizing open days with customers will definitely improve customer's satisfaction and lead to maintain loyalty customer relationship in higher education. Finally, these all will help to inculcate good quality higher education through ISO 9001 requirements providing good support facilities for students and stakeholders.

**Overview of ISO 9000 requirements**

<table>
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<tr>
<th>Major requirements on ISO 9000 with higher educational institutions</th>
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<tr>
<td><strong>Management Responsibility</strong></td>
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<tr>
<td><strong>Resource Management</strong></td>
</tr>
<tr>
<td><strong>Product and/or service realization</strong></td>
</tr>
<tr>
<td><strong>Measurement, analysis and</strong></td>
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improvements analysis needs to be done to determine whether any correction and corrective action has to be taken or not. If there is no cause for this to take place, the emphasis will be on the need to carry out continual improvement to ensure the high standard is maintained.

Source: The ISO 9001 requirements (adapted from ISO, 2008).

ISO 9001 INTERPRETATIONS

The following interpretations had been made based on this ISO 9001 requirements and UPS terms:

**Contract review:** Quality can be defined as the ability of the product to satisfy stated and/or implied customer requirements. Therefore, the first step in the development of a quality system in a university is to adequately identify these requirements. The objective of the contract review element of ISO 9001 is to provide the faculty (department) with a clear understanding of customers' needs and specifications, to evaluate if these needs can be achieved, and to provide the customers with a clear understanding of the manner in which the faculty (department) shall meet them. The following processes are covered:

- Defining and documenting the industry and society requirements with respect to undergraduate and graduate programs offered, by means of alumni and employers surveys, questionnaires, interviews, as well as the analysis of available legislation, governmental guidelines and standards.
- Accreditation of programs by regulating bodies, such as the Canadian Engineering Accreditation Board (CEAB) in Canada or the Accreditation Board for Engineering and Technology (ABET) in the United States in order to compete with the world class education system.
- Review of contracts with the employers participating in co-operative programs offered by the faculty (department). Review of students' understanding of the admission requirements, program content and context, graduation requirements, and their responsibilities and authorities, through interviews and surveys.
- Review of industry and government-sponsored research contracts, such as research projects undertaken with the Indian educational systems UGC, AICTE, QCI, DEC, BCI and also with the foreign educational systems.
- Assessment of the faculty's (department's) ability to meet the requirements.
- Contract changes, such as when a research sponsor changes the requirements.

As an output of contract review activities, program and research design/planning committees should have a clear understanding of the kind of programs/courses/research required, as well
as the faculty's (department's) ability to offer such programs and research. A document outlining core requirements can be prepared in the form of a program or research project brief, much like product briefs in manufacturing. An example of a typical contract review process in an engineering department.

**Design control:** Following contract review activities, the faculty (department) must demonstrate the ability to translate customers' specifications into appropriate design of programs/courses that had been offered, individual student curricula and research projects. Design control may consist of several stages, such as: identifying the input into the design process, verification of the program/curriculum/research design against design input, as well as validation of the design output against customers' requirements. Design input may include suggestions for new programs from UGC, AICTE, QCI, DEC, BCI or industry, analysis of customer needs and market position of the faculty (department), and feasibility studies for new programs or research. Design output should include the statement of factual content and format of programs skills and competencies to be developed in students or research projects, as well as an illustration of how the course/program/research project content is relevant to its aims and objectives. The responsibilities and authorities and the vertical and lateral interrelationships between the personnel which are involved in the design process should be defined and documented. Also, the faculty (department) must identify, document, review and approve design changes and modifications. The following processes should be included:

- Design planning, review, verification and validation of new undergraduate and graduate programs and courses.
- Design control of the individual student curricula, including the statement of minimum paths to graduation, elective and compulsory courses, responsibility and authority of students, and defining the student's input into the design process.
- Contractual research with industry and government agencies.
- Identification, documentation, review and approval of program design changes, including the addition of new courses and deletion of existing courses and programs.

**Quality planning:** Quality planning covers the identification, classification and weighing of product quality characteristics, establishing the objectives, requirements and constraints for quality, as well as the preparation of quality plan. Quality plans are documents setting out the specific quality practices, resources and sequence of activities relevant to a particular product, project or contract. This means that each course, program and a contracted research project
should have a separate quality plan, standing alone or as a part of the course or research project plan. A typical course quality plan should include:

- Course requirements from the customers
- Course objectives and specific knowledge/competencies to be developed in students.
- Course prerequisites & statement of any incoming inspection of student background knowledge
- Detailed topic layout and schedule of presentation (can be in a checklist form to provide the record of topics covered in class and the topics students would study on their own)
- List of required textbooks, software and laboratory notes.
- Instructions for teaching assistants and laboratory technicians
- Detailed inspection plan, including the type of tests (exams) planned, topics covered and weights assigned for each test.

**Purchasing:** Product design and quality planning is followed by the acquisition of necessary resources, including academic and support staff, information and material resources (hardware, software, equipment and facilities), as well as students. The objective of the purchasing requirement of ISO 9001 is to ensure that these resources conform to the specified requirements. This is necessary because the university builds the acquired resources into its products. For example, only the students who meet entrance standards should be allowed to enroll. Defective purchased material, such as a faulty overhead projector or inappropriate software loaded on the network, may negatively affect the quality of the teaching, learning or research processes.

The following processes should be covered by adequate procedures and records:

- purchasing of hardware and software required for the proper delivery of programs, courses and research projects;
- subcontracting of resources (facilities management, equipment maintenance, student transport);
- appointment of academic and support staff, including professors, teaching and research assistants/associates, administrative and technical staff;
- admission of undergraduate and postgraduate students.

Also, the appropriate verification of a purchased product or an acquired resource must be planned, executed and reviewed. Where specific contracts require the department or faculty/staff members to verify the purchased products or acquired resources. This verification should be planned, conducted and recorded according to the particular contract. An example of such activities may include screening of high school students through visits, the assessment of
community college programs to provide credits to transfer students and so on. In some instances, specific contracts may require the customers to verify purchased products or services at university's premises. This, in general, pertains to research contracts, but may include visits by the representatives of industry and governmental agencies to verify the delivery of programs and research.

**Control of inspection, measuring and testing equipment:**
Another set of resources that has to be allocated before the actual delivery of programs and research includes the inspection/measuring equipment and methods. This ISO 9001 requirement covers the methods and equipment used for measuring and testing of student knowledge/abilities, methods applied to ensure that programs/courses conform to the specified requirements, as well as the measuring and testing equipment used in research activities. The following processes are included:

- design of tests, quizzes, assignments, project requirements, exams;
- designing, applying, reviewing, validating, changing and improving the marking and grading schemes;
- review of inspection and testing methods for student knowledge, experience and skills;
- control, calibration and maintenance of equipment used for inspection, measuring and testing at the course level, such as instant scoring machines, standardized and computerized tests;
- control, calibration, maintenance, handling and safeguarding of inspection, measuring and test equipment used in research activities;
- control, maintenance and review of methods used for inspection and measurement of the degree to which an undergraduate or a graduate program meets specified requirements.

**Control of customer-supplied product:** The objective of this element of the quality system is to demonstrate the capability of the faculty (department) to identify, maintain, store, preserve and properly handle all material provided by students in the course of studies, and all products provided by external organizations with which the department has contracts for research projects. The identification, verification and handling of student supplied material, such as exams, tests, assignments, reports, theses, software and books are covered. Also, the examination, storage, maintenance, preservation, handling and proper usage of hardware and software provided by research sponsors, industry and governmental institutions and/or agencies should be documented by appropriate procedures and records.
Training: The faculty (department) and individual faculty and staff members must identify the training needs of its faculty and staff, and provide for the adequate training. Also, student counseling needs should be identified and proper counseling services supplied. Thus, the following processes should be addressed by appropriate procedures:

- development and training of faculty, teaching and research assistants, and support staff;
- student curriculum counseling;
- faculty members’ maintenance of professional competence;
- research staff development and training, including sabbatical leaves;
- faculty promotion and tenure.

Appropriate records of training activities must be maintained.

Process control: After the allocation and deployment of adequate resources, the delivery of programs and research is soon to follow. In general, the teaching, learning and researching processes are addressed by this requirement. The objective is to ensure proper identification and planning of these processes, and to ensure that they are carried out under controlled conditions. Controlled conditions include:

- documents defining the manner in which the processes are carried out, such as course/research project plans and procedures;
- use of a suitable equipment and a suitable working environment;
- compliance with reference course and research project quality plans;
- monitoring and control of product quality characteristics and suitable process parameters;
- preventive/corrective maintenance of equipment used for teaching, learning and research.

It is important to note that the control of the learning process and its product, namely student knowledge, is also focused by the inspection and testing element of ISO 9001. This element covers the student-based control of individual learning, via student presentations, seminars and design projects.

Inspection and testing: Student knowledge, programs/courses and research must be inspected and tested against the requirements set in appropriate procedures and quality plans. Also, records of such activities must be kept. The ISO requirement Inspection and Testing applies to the receiving, in-process and final inspection of:

- undergraduate students' knowledge and skills acquired in a particular course;
- student's academic status (program level inspection);
• graduate students, including course-work and thesis-related work;

• research projects against the requirements set out in the research contract and/or project plan.

**Inspection and test status:** After performing inspection and testing of its products, the faculty (department) must ensure that the products are properly identified, and that the inspection and test status indicates whether the products are conforming or nonconforming to specified requirements. For example, a class list with grades for specific components of the course indicates a student’s inspection and test status in a course. Another example is the student academic status, determined after evaluation by the board of examiners. A student may also be requested to repeat a course, and his/her status indicated on the transcript. Thus, inspection and test status of undergraduate and graduate students at the course and program levels, as well the status of research projects conducted in the faculty (department) must be identified.

**Control of nonconforming product:** The purpose of inspection is to confirm whether a product conforms or does not conform to specified requirements. Nonconforming products are students who do not meet course or program requirements, courses/programs that failed to achieve stated objectives, as well as research projects that did not meet specified contract requirements. Research activities have such a nature that sometimes a failure to prove a hypothesis is a valuable research result. In this case a ‘failure’ is not necessarily identical to nonconformance. Only when a contract with industry or a research sponsor exists should this ISO 9001 element be applied in research.

The identification, evaluation, documentation and segregation of nonconforming students, courses/programs or research projects are required. In terms of undergraduate students, control of nonconforming related to term-work and final exams, as well as control of students under academic suspension is required. Control of graduate students who do not meet course or thesis requirements, as well as nonconforming contracted research must be addressed by appropriate procedures and records, as well.

**Corrective and preventive action:** A logical path after the occurrence of nonconforming products is to look for and eliminate the causes of these nonconformities, if feasible. This is done by planning, designing, implementing and reviewing adequate corrective actions to prevent existing nonconformities from occurring again, and adequate actions to prevent the occurrence of potential nonconformities. Corrective and preventive actions taken at all stages of planning, design and delivery of programs, courses and research in the faculty (department) are included in this element. Existing and potential nonconformities are identified, for instance, by means of internal Quality Audits, statistical techniques, tests or personal observations.
Handling, storage, packaging, preservation and delivery:
The material and equipment used in teaching, learning and research should be properly handled, stored and preserved in order to prevent damage or deterioration. Also, a safe and healthy environment should be provided. In case of any damage or deterioration of material, equipment and/or environment occurs, the objective is to ensure detecting and assessing such occurrences, and implementing corrective and preventive actions to eliminate causes of further damage and/or deterioration.
The equipment and material include lecture rooms, research laboratories, computer laboratories, overhead projectors, electronic displays, chalk boards, textbooks, software, solution manuals, materials used in tests and experiments, research project reports, and research papers. Provision of a healthy and safe environment includes proper conduct of faculty, staff and students, personal safety and health, as well as parking and traffic regulations, sports services, housing and student life. Adequate procedures and records must be documented and maintained to assure quality. **Servicing:** Finally, Servicing of programs/courses and research project follows delivery. Under this requirement, students are provided with information on new developments in the field of expertise. Also included are career counseling, provision of the list of engineering graduates to prospective employers and alumni organization's services. In terms of research, servicing activities are performed to achieve the overall performance, satisfaction of the stakeholders, parents, management along with proper error corrections measures.

**Conclusion:**
As a conclusion, ISO 9001 maintenance were poured a way to sustainable good learning environment in higher education. It enhances endeavor quality improvement on global map in all countries. Hence, all the countries work together to achieve ISO 9001 certificate in Higher Education Institutions (HEIs). The ISO 9001 requirements, UPS and interpretations will definitely implements remarkable effort and appreciation in higher education systems. The paper has considered ISO 9001 UPS systems as a framework for a HEI to design and implement best practices in teaching and learning. The focus of designing best practices in teaching and learning process using ISO 9001 should entail the incorporation of organizational mission and strategic goals into the educational quality management system; the establishment of a quality management system as a framework to direct and control all processes in teaching and learning to ensure specified requirements are met on a consistent basis; the implementation of continuous audits to determine the effectiveness of the teaching and learning process and the quality management system whilst audit findings are used to identify opportunities for
improvement; and the implementation of continuous improvement to enhance the satisfaction of customers and other interested parties as well as to continuously increase organizational capabilities in providing and delivering academic courses. Adopting best practices in teaching and learning in higher education institutions using ISO 9001 will ensure that all academic standards are fulfilled; efficient teaching and learning activities through measurement as practiced, analysis and improvement activities at each step of the quality management system are undertaken; customers' satisfaction by continuously meeting their requirements are enhanced; and institutional effectiveness and improvement effort are determined. In the context of India, the intention to introduce quality assurance standards and procedures for public HEIs by the Ministry of Education, similar to the UGC, AICTE, QCI, DEC, BCI, will certainly enhance the institutions ISO 9001 quality management system adherence to a common and high education standard in delivering academic courses. In continuing the quality journey and ensuring quality of the highest creditable and standards, higher education institutions should continuously improve their teaching and learning effectiveness and efficiency by embarking on benchmarking projects with renowned education institutions to ensure it is of a world class standard.

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