INTRODUCING INNOVATIONS IN EDUCATIONAL INSTITUTIONS FOR QUALITATIVE IMPROVEMENT

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SYNOPSIS

This article is intended to communicate to all educational policy-makers and administrators that today scientific strategies are available for them for bringing about qualitative improvement in technical education. This is possible only when all participating in this venture acquire scientific knowledge and skills from the variety of educational sciences.

1.0 INTRODUCTION

This article is the result of my dialogue with the policy-makers and managers of the technical education system at the state level and principals of the technical institutions which were assisted by me as process consultant. I was and still am involved in their quality improvement programmes : improving quality of curriculum development, instruction, instructional material preparation and students' learning.

Industry and business enterprises are quite conversant with TQM movement and its impact on their human resources development programmes. Educational system is not yet even aware of the necessity of such TQM efforts. There is a difference between TQM for industry and TQM in education.

TQM techniques for industry are derived from physical and management sciences while TQM in education needs the foundation of educational sciences and management sciences. While product and services are the outputs of the industry, student learning is the output of the educational enterprise, which employs curriculum, instructional and students evaluation processes to make students learning effective.

Acquiring knowledge and skills related to these educational sciences is essential for the system's TQM programmes.

This article is the generalized version of a specific report which I had prepared for the guidance of my client - organization. Some of the ideas are implemented and some are not. Still the basic ideas are valid for all technical institutes who wish to improve quality of student-learning.

This is a huge task and can be handled only by the people who are managing the system. I hope, the ideas

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explained here will set the tone for future debates through this Journal.

2.0 ADVANCES IN EDUCATIONAL AND MANAGEMENT SCIENCES AND TECHNOLOGY

The nature of quality management of educational practices are today better understood in view of the advances in the following disciplines :

A. EDUCATIONAL SCIENCES :

1. **Psychology of learning and development** which combines behavioural, social and cognitive psychology to explain how adolescents & adults learn in schools as well as on-the-job.
2. **Educational Technology** explains how a teacher can make use of learning sciences to design instruction combining content analysis, teaching methods, teaching aids and evaluation to help student acquire necessary competencies in an individual subject.
3. **Curriculum Design And Development** which explains how team of teachers co-operatively can design and develop the entire curriculum to enable a student to acquire curriculum objectives.
4. **Educational Planning And Management** which explains how any top-manager of any educational enterprise can design projects to take the existing institutional traditional educational practices to the higher level of scientific management through TQM strategies.
5. **Systems thinking** which explains how any teacher, head of the dept. or principal can view the practices in systems terms for analysis, design, development and implementation of better educational and management practices.
6. **Educational Research** explains the difference between formal academic research and action research and how to systematically use knowledge and tools of research to transfer generic knowledge to improve field practices through action research.

In short it is now possible for teachers and heads of the education and training institutes to improve quality of **student's learning** by enabling teachers to design and develop scientifically **class-room instruction,** which in turn is embedded into the **scientifically designed curriculum,** which can be integrated into any traditional system by **scientific educational planning and management** for innovation by the top manangement.

Simultaneous efforts of all are required for such a quality improvement enterprise.

B. MANAGING SCIENCES :

1. **Principles and Practices of Management :** This discipline describes roles and functions of a manger in any organization and explains how a manager while planning, organizing, decision-making, co-ordinating and evaluating should view his organization as on open social system and integrate people's contribution with the organizational goals.
2. **Organizational Psychology :** This is the field intimately tied to the recognition that the organization are complex social systems and helps management to understand how the

personal growth of individuals in an organization be related to rapidly changing technologies, how organi - zation be designed to foster optimal relationship between various social groups within it.

3. **Organizational Development :** This discipline describes how top management supported, long-range effort to improve on organization, problem solving and renewed processes, particularly through a more effective and collaborative diagnosis, and management of organizational culture - with specific emphasis on formal workteams, temporary teams and inter group culture - with the assistance of a consultant facilitator and the use of theory and technology of applied behaviour sciences including action resource.

4. **Human Resources Management :** This discipline helps human resources professionals to understand how they can become strategic partners in systems analysis and improvement that will empower employees to control their own work across traditional organizational barriers in order to achieve world class performance.

5. **Managing Information Systems :** This discipline describes how the information is generated, processed and utilized in the society as well as in organizations. In all organizations as well as societies, it is the communication systems that bind the people, groups and departments together and help the system to maintain steady state.

6. **Action Science :** This is a newly emerging science which seeks knowledge that will serve action. The action scientist is an interventionist who seeks both to promote learning in the client system and to contribute to general knowledge. This is done by creating conditions for valid inquiry in the context of practical deliberations by members of client systems.

   The knowledge generated through action research must be designed with the human mind in view; taking account of its limited information seeking and processing capabilities in the action-context.

   The knowledge should be relevant to the forming of purposes as well as to the achieving of those purposes already formed.

   The knowledge must take account of the normative dimensions i.e. value questions implicit in the injunction to attend to the forming of purposes.

   Action scientist is a practitioner an interventionist, seeking to help client system to create conditions in the practical world, that are conducive to inquiry and learning, to change themselves so that these interactions will create those conditions for inquiry and learning.

3.0 WHAT IS 'QUALITY' IN EDUCATION AND TRAINING

A. Definition :

Education and training activities are said to be qualitatively effective when its product i.e. Trained student is acceptable to the employing industry

who is engaged in qualitative improvement of its own product or services.

Such a student must possess following core competencies :

i) **Professional Core Competencies** to enable him to understand, adopt or adapt himself to techniques of the industry and carry out effectively and efficiently the tasks assigned to him (Earning for living Domain)

ii) **Social Core Competencies** to enable him to effectively work in teams in industry, as well as a member of a family, community and as citizen of his country (social Development Domain)

iii) **Personal Development Competencies** to enable him to maintain his health and aesthetic, moral and intellectual sense so that he can maintain his self-efficiency and through self regulation can independently face any situation on his own competencies (Personal Development Domain)

iv) **Continued Learning Competency** to enable him to improve his performance continuously in his individual tasks, group tasks and organizational task even in continuously changing situations.

B. Why Innovative Activities are Necessary to Improve Quality in Educational Practice

"Quality improvement in education and training" is a new concept especially in secondary and higher education, especially in developing countries.

In developed countries too, there is a lot of scientific literature available, but educational practices in higher education have not changed much. There is no TQM movement in Educational institutes in the way it is being preached and practiced in industry.

In India in general and IGTRs in particular, all educational practices are based on tradition and improvements are done on the basis of trial and error. Past experience is carried forward to guide current practice. In case of difficult situation, educational leaders turn to consultants or wise men in the field for their intuitive knowledge.

However, during last two decades, tremendous advances made by educational researchers have placed at the disposal of practitioners of education a valid knowledge base.

With the acquisition of scientific concepts and principles, teachers, students, curriculum designers, educational planners can describe their system, understand and explain teaching and learning activities; predict consequences of choosing one method in preference to others, and design and implement better instructional systems for efficient and effective students learning.

However, transferring scientific knowledge to practice is not an automatic process. This knowledge needs to be first transformed to suit field conditions in which social factors play critical role in the situation simultaneously for example :

Students characteristics, and his learning process; nature of knowledge, the purpose for which it is used; the nature of knowing processes i.e. methods used, media employed; and finally the learning context in which the learner is placed.

It is the learning context in these

factors which determines which scientific concepts and principles operate in a given context.

The teacher has to first tentatively design instruction and learning situation, test it first on individual, small groups and then full scale field testing for efficiency and effectiveness.

These are the beginning of innovative experiments in instructional design. Such innovative experimentation can expand its scope to more than one subjects which are related and gradually to entire curriculum.

For such innovations to take place, the institute has to identify 'entrepreneur teachers' and students ready to deviate from the tradition and participate in such experimentation which is generally a teamwork. In order to maintain their morale, the top management has to publicly support these innovations through policy-statement, provision of more time and resources and institute a reward system for the recognition.

The institute should also initiate broad curriculum reform to provide framework for innovations at the subject level , so that subject-level reforms are aimed at achieving curriculum objectives desired by the industry.

4.0 NEED FOR SYSTEMWIDE STRATEGY FOR EDUCATIONAL INNOVATIONS

Thus improving quality of students learning at the end of the course requires teacher and student entrepreneur who are prepared to engage in innovative activities in variety of subjects; Heads of the Dept. entrepreneurs' ready to promote curriculum reforms by integrating individual innovations into the whole curriculum and managers entrepreneurs' ready to install project management for sustaining such innovative activities for continuous improvement.

This needs systemwide strategy for restructuring the organization, redefining roles of various departments and the key personnel at top management, middle management and operational level. This will also need redefining HRD department's role, that it will align themselves with the top-management strategy for TQ.

5.0 IMPORTANT FEATURES OF SYSTEMWIDE INNOVATION STRATEGIES

Following are the main steps of the system wide innovative strategies :

1. **Acceptance by** the top management that it is possible to use science for improving practice through a policy-statement.
2. **Setting for the institute** the institutional goal of improving quality of student's learning in their long term courses.
3. **a) Strategy Planning and Management** for achieving institutional goal stated above, the components of which are as follows :

i) Survey of industry and society.

ii) Survey of the institute itself - its structure, culture, resources (pre-project status).

iii) Prepare policy statement explaining to all the staff institutional vision for achieving the institutional goal (post-projects status).

iv) Conduct gap analysis i.e. difference between post-project status and prepare project status.

v) Prepare a mission statement clarifying how to close this gap. Mission statement clarifies long term goals.

vi) Convert mission statement into list of short-range objectives (medium and short term)

vii) Plan strategies at macro-level to achieve long term, medium term objective; and at micro-level (operational level), short term objectives.

3. **b) Manage planned strategies for implementation through :**

i) **Process integration** for ensuring identification, measurement and systematic development of flow of core sets of linked activities in order to improve organizational performance in education.

ii) **Project involvement** for formation of innovative teams for assessment and resolution of single, non-recurring problems through the development of employee involvement.

iii) **Performance integration** for daily implementation of continuous improvement in personal task and relational activities within an employee's own scope of responsibility.

iv) **Plan and manage** corresponding HR strategy to fit into the above institutional strategy.

4. **a) Process Planning and Management** to ensure organization wide continuous improvement on daily basis within the broad framework of strategy planning outlined in para 3 above, the components of process planning are as follows :

i) **Restructuring** the organization for increasing productivity.

ii) **Assessment of existing** educational work processes with focus on value adding quality of the process and flexibility enhancement.

iii) Employee empowerment.

iv) Continuous improvement for simplifying, speeding and increasing service to internal and external customers.

v) Effecting cultural chance through changing the mind-set of employees; leadership style and work-design.

4. **b) The process implementation** aims at actually bringing about changes in the way educational practices operate to ensure : (i) minimizing errors; (ii) delays; (iii) maximizing use of assets; (iv) promote understanding; (v) simplifying the process; (vi) making the process adaptable to changing needs; (vii) making the process student and industry friendly; (viii) provide organization with the competitive edge; (ix) reducing excess head count.

The process implementation goes through five phases

i) Organizing for improving the process.

ii) Understanding the process

iii) Streamlining the process

iv) Measurement and control of the progress in improvement goals or objectives.

v) Continuous improvement

In all these phases, the focus is on the continuous improvement of the process. Continuous process improvement is essential, because every process

reaches qualifying stage through six levels of improvement i.e.

levels	Status
1.	Unknown status
2.	Understand status
3.	Effectiveness status
4.	Efficiency status
5.	Error-free status (highly effective and efficient)
6.	World class status

c) Plan and implement corresponding HR process to assist line managers to plan and implement institutional innovative process.

5. Project Planning and Management for speaking with facts.

a. Project focuses on a single, non recurring events that implement organizational changes through structured phases and specified outcomes. It requires team work for successful completion through finding facts about the project.

b. Project planning is devising a project plan to identify how and what facts are to be determined. This plan consists of cycles of SDCA and PDCA (SDCA : Standard, Do, Check and Act. PDCA : Plan, Do, Check and Act).

c. Project management is intended to actually collect facts taking into consideration subcultures existing into the organization and providing corresponding leadership styles and with focus on internal and external customers and long term goals.

While project management steps take into consideration following phases and stages in any project life cycle,

i) Phases : feasibility, formulation, implementation, installation and sustaining.

ii) Stages : Gestation, growth, independence and decline and wealth,

leaders must be capable of team development for successful project management.

d. Plan corresponding HR strategies to help guiding teams, problem-solving teams and self-managed teams.

6. Individual Performance Planning and Management

a. **Business Performance Planning** addresses both individual performance and system performance. But here the focus is on building individual performance so that he can contribute to the TQ in the whole organization.

Individual performance planning aims at helping individual to assume responsibility for his own learning and work contribution.

This is called empowerment. The empowerment begins with clarifying and aligning personal / organizational vision/mission, entrusting individual a task to implement, providing support and training to enhance individual skills and helping him to solve problems for continuous improvement.

b. **Business Performance Management** is intended to help individual to personalize quality practice in daily work through the use of

i) Organizational Integration Chart

ii) Leader Performance Matrix

iii) Personal Process Chart

iv) Quality Journal

c. **Plan and Manage HR Practices** using model of motivation and performance, establishing psychological contact, helping individual learn systematically, develop ethical work culture practicing creativity and always assessing personal stage of readiness to absorb and sustaining work changes.

7. **Top Management Role in Developing, Integrating Total Quality Implementation Plan**

Top Management must develop total implementation plan integrating following steps :

i) Goal Setting Implementation

ii) Assessment Implementation

iii) Strategy Implementation

iv) Process Implementation

v) Project Implementation

vi) Individual Performance Implementation

vii) Evaluation and Control Implementation.

Thus, innovation should be initiated both at the macro-level as well as micro-level simultaneously.

The Manager has to look at the two aspects of management simultaneously.

i) First, to ensure that the current educational activities are not unduly disrupted due to experimentation and innovation activities.

ii) Second, to install project management to encourage entrepreneur teachers and managers to undertake and sustain innovative activities till improvements are validated and then systematically integrated into the whole system.

The management has to adopt a system-wide strategy for innovation in Education and training practices.

6.0 CONCLUSION :

Supplying quality manpower (professional, middle level and skilled worker) to the industry to help them upgrade themselves to be able to absorb advanced technology requires long range organizational TQ strategies to improve its student-learning acceptable to industry.

For this to happen the educational institutions should first accept that it is possible to use scientific knowledge available in Educational and Management sciences and system sciences for systematic planning and implementation of organizational strategies, process and individual performance improvement, strategies at the operational level for continuous improvement and attending to individual and project teams need to learn and contribute.

The initiative for the total organizational quality improvement must come from the top management. The Ministries, the Directorates, the State Boards and Principals. This initiative should be reflected in policy papers, operational plans and control plans.

7.0 REFERENCES :

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