

Kaizen for standardizing educational institutions

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ABSTRACT: Teaching, scientific and technological innovations are the most important key factors and heart of an educational institute. It is necessary to monitor and focus the entire aspects of an institute to bring overall improvements. Effective teaching –learning process, quality, resource management and other improvement can be achieved in a short period of time using Kaizen. This is a Total Employee Involvement (TEI) technique which brings together all the employees of an organization right from top management to workers for bringing continuous improvement in an academic organization.

Keywords: Kaizen; Higher education; teaching; feedback; Continuous improvement.

1.INTRODUCTION

Kaizen is definitely appropriate for educational institutions [10]. Kaizen would be independent of the formal administrative performance evaluation process for professors. Kaizen can help higher education institutions compete more effectively against both traditional non-profit and newer for-profit sources of higher education [1]. Kaizen (Kai = Change; Zen = for the better) means continuing improvement involving everyone in the organization from Top management to workers. Kaizen is a continuous improvement technique by utilizing the knowledge and not by investing money. Kaizen focuses on the basic way that we can work for standardization. Implementing Kaizen principles involves more attention to details and practical ways to do things better and more efficiently using feed-back techniques [9]. Kaizen – “A Japanese philosophy that focuses on continuous improvement through all aspects of life” [7]. It was first implemented in several Japanese businesses after the Second World War, influenced in part by American business and quality management teachers who visited the country. It has since spread throughout the world and is now being implemented in many other venues besides just business and productivity [2].

According to Kaizen “If there is No Action there can be No Success.” So the attitudes of employees, right from top management to workers must be changed for successful implementation of Kaizen and continuous improvement of an organization. The five main elements of kaizen are Teamwork, self discipline, improved morale, Quality circles and Suggestions for improvement. It is a useful tool to coordinate continuous improvements.

2. WORLD-CLASS QUALITY IN TEACHING INSTITUTIONS

Education is a lifelong process of progress and development. World-class quality education is to be continued in teaching institutions. The effectiveness of an institution depends upon its infrastructure, learning resources, curriculums, quality of teacher, Classroom-management, practical use of methods, teaching technologies and skills in teaching-learning process. Quality education is possible only through quality teachers who come out from the quality institutions (Prasad, 2004) [6].

If a student did not succeed, it was viewed as the student's own failure. The continuous quality improvement mindset requires a clear understanding that the student is the customer, along with the student's parents and the organizations that hire our students. [5]. The role of faculty members in providing an undergraduate educational experience is to serve those customers. If a student fails, then the system may have failed and the faculty should make suggestions to change or improve the system for reducing failures. So the faculty must be involved in a continuous improvement process in teaching and learning. Effective teaching process of an institution depends upon proper Planning, Organizing, Directing and Controlling. Teachers must acquire new and effective teaching skills and upgrade their teaching competencies, so as to ensure that maximum learning takes place. Students are demanding for more practical exposures and high performer teachers. Hence teachers have to take responsibilities beyond their traditional roles. Educational management comprises the basic concept of management, organization, administration and skills in instructional planning. So it is important to analyze the failure of a student for improving the effectiveness in the existing education system. To improve the quality of teaching and learning process, periodic assessment of students and faculties are to be made to determine their skills, attitudes, knowledge, problems faced, outcomes and feed backs for better improvement.

Assessment can be made in the following ways

- a) It must be clear, constructive, joyful and motivating without any sort of stresses.
- b) It must provide opportunity for an individual to assess himself with clear thought.
- c) It must promote self-development capacity in students.

So without better visibility into assessment of academic activities across the institution, the faculties“ will lag to apply best practices, strengthen results and conserve resources. Student feedback must be used as an assessment tool for assessing the gap between the actual level and the reference level to accelerate the quality of teaching and learning [3]. Criticism and decisions without good proper data kills the initiative and empowerment [8], so create a blame-free, non-judgmental culture.

3. KAIZEN DUTIES FOR DIFFERENT LEVELS IN MANAGEMENT

3.1. *Kaizen process*

Kaizen is an on-the-job learning process where people at all levels in an organization analyze and perform corrective actions for achieving the improvements quickly in a short period of time. Observation, data gathering, analysis, and critical thinking are mostly required for the implementation of kaizen process. The Faculties and staff members must identify and suggest the low cost and highly effective solutions for achieving better results in day to academic activities. Thus, kaizen promotes teamwork and most improvements can be made by kaizen activity. According to Masaaki Imai [7] the kaizen style of operations has three pillars:

- a) Concepts that involves the way of thinking.
- b) Systems to implement the work.
- c) Tools to affect the process.

Masaaki Imai [8] lists the following kaizen duties for the different levels in management:

3.1.1. Top management

1. To be determined to introduce kaizen as a corporate strategy.
2. To build systems, procedures and structures conducive to kaizen.
3. To make employees kaizen-conscious through intensive training programs.
4. To build systems, procedures and structures conducive to kaizen.
5. Adopt Kaizen philosophy of continuous improvement and sustain the Kaizen culture.
6. Continue to develop new leadership skills.
7. Perform Presidential Diagnosis reviews.

3.1.2. Middle management and staff

1. Learn KAIZEN fundamentals and understand the need for change.
2. Set challenging improvement goals for targeted processes.
3. Deploy and implement kaizen goals as directed by top management through. policy deployment and cross-functional management.
4. Support top management in reaching the decision to proceed.
5. Conduct workshops and Train staffs and supervisors to lead workshops.
6. Help employees to develop skills and practice analytical problem solving tools.

3.1.3. Workers

1. To engage in self-development trainings to become a better problem solvers.
2. To engage in kaizen through the suggestion system and small group activities.
3. To practice 5S in the workshop, libraries and laboratories in the institute to achieve total organization, cleanliness, and standardization.

4. KAIZEN IMPLEMENTATION

Kaizen implementation promotes teamwork, self-disciplined, 5S, training, quality and continuous improvements for overall success of an organization. It is a step-by-step approach by developing employee skills through training and increased involvement.

The basic principles behind Kaizen implementation are:

1. Human resources must be considered as the most important asset of an organization.
2. Improvements must be made gradually rather than radical changes based on assessment and evaluation of performance.

Improvement can be broken down between innovation and Kaizen. Innovation involves a drastic improvement in the existing process and requires large investments. Kaizen signifies small improvements as a result of coordinated continuous efforts by all employees [4].

4.1. Planning and Preparation: Plan and select where kaizen application is required for an organization either in administrative or in academic process. Next focus on the specific area (i.e. quality in teaching, institutional development, resource management etc).

4.2. Problem definition and Implementation: The Kaizen implementation team must have a clear understanding of the "current state" of the defined problem so that all team members will be aware of the problem they are working to solve. Once team members identified the root-cause of the defined problem, suggestions must be collected from various levels of people in management and appropriate solution must be implemented.

4.3. Check or Follow-up and Act: Follow-up of kaizen events are required to assess the performance and identify the improvements required for continuous improvement in the system. Team members must evaluate and review the performance of the system whether the proposed changes have brought desired results or not? And suggest suitable plans to assure implementation. Apply the concept of Plan, Do, Check, Act or implement (PDCA) Cycle (Fig.1) in day to day academic activities and determine the root Cause of an issue using fishbone (the proposed system as shown in (Figure.2)).

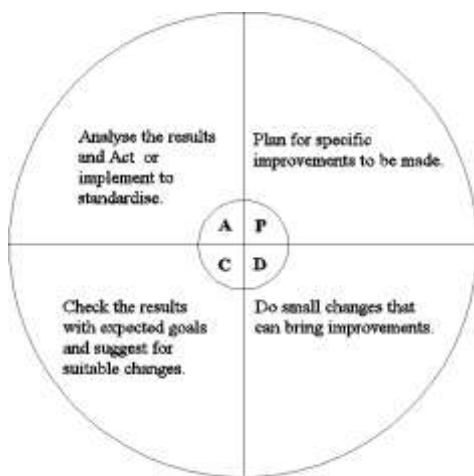


Figure-1 : PDCA- Cycle.

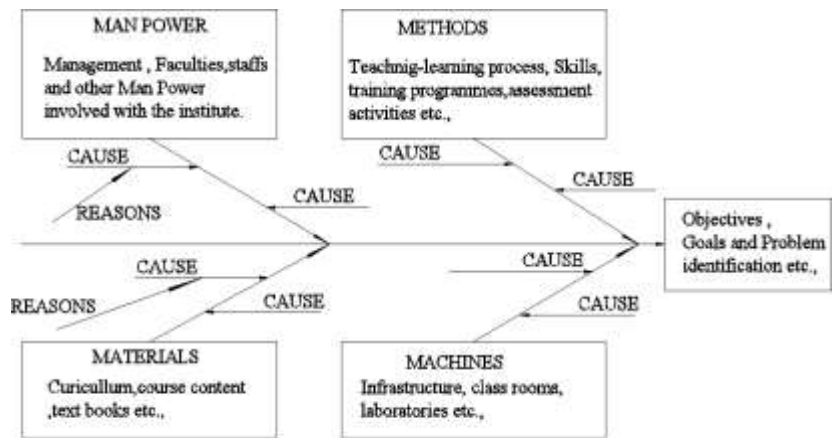


Figure-2 : Fish-Bone technique in Root-Cause Analysis.

5. IMPROVEMENTS USING KAIZEN

Kaizen should be linked to personal development and enablement. Kaizen process must be trained to bring awareness to people in all levels of management before practicing and implementing it. Senior management experts in kaizen must create awareness to every employee the benefits of implementing kaizen.

The following members must be associated with the Kaizen implementation team.

1. Senior management, Middle management, Staff's and workers;
2. Faculty member's expertise in kaizen; management and engineering.

Like every other service organization, educational institutions' administrative and other management processes include a high proportion of non-value adding activities. The Kaizen philosophy, tools and techniques helps everyone in the organization to continuously improve everything they do every day [10].

The following guidelines can be utilized to implement kaizen in an institution

- a) Have a passion to train faculties, staff and administrators to implement kaizen.
- b) Top management commitment is required for successful implementation.
- c) Every faculty and staff must be encouraged to come up with new ideas that could bring improvement in the teaching process within a short period of time.
- d) Facilitate brainstorming processes - Eliminate communication barriers between the management and staff members to share the Success and Failures in the academic activities to gain feedback and suggest for continuous improvements.
- e) Standardize the teaching learning processes in day to day academic activities to achieve international standards and quality.

- f) Easily translate the basic subject concept into a simple practical application in such a way that it must be interesting and understood easily by the students.
- g) Encourage Experimental lectures and demonstration projects to give practical application of the academic subjects that students undergo.
- h) Collaborate with industries to strengthen the research activities of the institution and also to give practical exposure to students in R&D projects.
- i) Monitor the results, gain feedback and suggest for continuous improvements.
- j) Suggest possible solutions to improve the quality and standards.
- k) Render Mutual Support and conduct periodic Trainings Programmes periodically to staffs.
- l) Practice analysis tools like ***Cause-and-effect or fishbone diagram*** and to look over an issue by considering the ***4 M's (Manpower, Methods, Machines, Materials), 4 P's (Place, Procedure, People, Policies) and 4 S's (Surroundings, Suppliers, Systems, Skills)*** associated with the day to day academic activities.
- m) Implement ***5S (Seiri, Seiton, Seiso, Seiketsu, Shitsuke)***, which means (Sort, Clean, Set in order, Standardize and Progress) in class rooms, offices, laboratories, workshops, hostels, campus environment, stores and in other maintenance departments of the institution to ensure standardization.
- n) Implement a web based campus management solution like ***Enterprise Resource Planning (ERP)*** System for quick access of overall information & to reduce the wastage of papers, time, and money.

Table.1: Implementing Kaizen for various issues that arises in an academic institution

Cause - Problem definition	Solution- Improvements that can be made using cause & Effect and Fish –Bone technique
First year students are not clear in getting basic ideas of the academic Programme that they had opted.	<p>Determine the degree to which the institutional goal & curriculum meets the industrial and global expectations.</p> <p>Describe the purpose and learning objective of each course that they will undergo during studies.</p> <p>Conduct orientation Programmes to give a brief outline of the course content, objective, outcome and carrier path.</p>
Students requires more practical exposure in applying the technical skills	<p>Demonstrate the subject concept with an appropriate technology.</p> <p>Evaluate the feed back to determine the current level to the expected level of the student.</p> <p>Relate the subject concept practically and describe how the basic concept is applied practically with end to end applications.</p>

<p>Students find difficulty in interacting with one another and also with faculties</p>	<p>Create a student friendly environment.</p> <p>Encourage technical fest, cultural, seminars, symposiums, conference & educational tours.</p> <p>Nominate student welfare officer and counsel them using counseling forms to solve issues.</p>
<p>Students dislike more assignments and not satisfied with theoretical lectures.</p>	<p>Student should be empowered to the role as a feedback giver.</p> <p>Assess the student's feedback and practice analysis tools like Cause-and-effect or fishbone diagram to solve the issues by identifying corrective actions.</p> <p>Arrange more guest lectures by industrial experts to give more practical exposures.</p> <p>Motivate and encourage student's involvement in the R&D Projects.</p>
<p>Only a very few students gets placed in core industries.</p> <p>(Students are not capable to meet industrial requirements.)</p>	<p>This may be due to more theory oriented lectures by faculty members. It will not help the students for better survival in industries.</p> <p>Recruit personnel's from industrial and R&D sectors as faculty members. This will give a broader practical exposure to students in such a way that handling subjects with practical knowledge yields good results than theory oriented.</p> <p>When industrial personals are recruited as faculties they will not only teach, they will also train students as real engineers during their course of study with code of ethics.</p>
<p>Lagging in Students Placement</p>	<p>Students must be ensured to have attained the outstanding academic and breadth of transferable skills during their final year of studies.</p> <p>This can be assessed by pre-placement activities, to be carried out by internal members of the institute.</p> <p>Excellent institute – industry <i>rapport</i> enhances job opportunities for students in reputed industries and business firms.</p>

More paper wastages in administration and academics	Implement web based campus management system like ERP software system. ERP systems are flexible to streamline the administrative processes beginning from recruitment to pay slip with other administrative documents which includes purchase orders , pay bills , staff leave forms , approval letters from top management , inventory control , logistics, students admissions , college fees, exam fees receipt , financial aid, student records, attendance etc.,
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6. CONCLUSION

Senior management commitment and involvement in kaizen implementation are more essential to demonstrate the benefits of kaizen to every employee in the organization. Continuous assessment of students, faculties and academic system are more essential to ensure the quality of an educational management system. The quality of the outcome of an educational institute is determined by the creative potential and skills possessed by the students to meet the global requirements. So implementing kaizen in academic activities will bring changes and leads to improvement.

Kaizen focuses on continuous improvement using knowledge based tools like *Pareto and Ishikawa diagrams*. Kaizen must be daily practiced in the working areas and the better ways for achievement must be well defined to each employee in the organization. It is essential to identify a cause of a problem and to eliminate it as soon as possible.

Kaizen also integrates all the departments and functions in an academic institution for maximal utilization of available resources in a better way to bring better changes.

When both employees and management of an organization start to admit that the improvement of work quality is an important activity then Kaizen is said to have implemented.

6.1. Scope for future work: The present work was focused to implement kaizen in small primary schools to professional institutions which will make gradual changes through small improvements to meet international standards in Education, Teaching, and Research & Development.

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