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Kaizen: Potentiality in Utilization of Human Prospects to Achieve Continuous Improvement in the Quality of Higher Education

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Abstract

The paper contains definition of Kaizen, describes its philosophy and a brief of basic terms. Kaizen strives to empower the subordinates, increase their satisfaction, facilitates a sense of accomplishment and thereby creates a pride of work. The most important idea of the paper is utilization of these human potential to achieving continuous improvement and competitiveness in the field of quality education in different universities, where it is intended to reach through Kaizen philosophy. Kaizen can help higher educational institutions compete more effectively against both traditional non-profit and newer for-profit sources of higher education. In conclusion, the paper summarizes some practical examples of improvements and benefits, reached through Kaizen and emphasizes general thoughts of Kaizen. Although there were limitations of time, knowledge, experience and resources, the study is to prove the worthiness of the people in an organization.

Keywords: *Kaizen, Continuous improvement, human potential, higher education*

1. Review of Literature Discussing Related Topics

According to Imai (1986), Kaizen is a continuous improvement process involving everyone. Broadly defined, Kaizen is a strategy to include concepts, systems and tools within the bigger picture of leadership involving and people culture, all driven by the customer.

The philosophy of Kaizen has kindled considerable interest among researchers because it increases productivity of the company and helps to produce high-quality products with minimum efforts. Several authors have discussed the concept of Kaizen including Deniels (1996) and Reid (2006) etc.

Newitt (1996) has given a new insight into the old thinking. The author also has stated that Kaizen philosophy in the business process management will liberate the thinking of both management and employees at all levels and will provide the climate in which creativity and value addition can flourish.

Wickens (1990) describes the contribution of teamwork to make the concept of Kaizen. Teamwork and commitment do not come from involving the representatives of employees, but from direct contact and communication between all the individuals and their upper level supervisors (or anyone to whom they are accountable or responsible to report).

Watson (1986) says that the origin of Plan-Do-Check-Act (PDCA) cycle or Deming cycle can be traced back to the eminent statistics expert Shewart in the 1920s. Shewart introduced the concept of PDCA. The Total Quality Management (TQM) guru Deming modified the Shewart cycle as: Plan, Do, Study and Act. The Deming cycle is a continuous quality improvement model consisting of a logical sequence of these four repetitive steps for Continuous Improvement (CI) and learning. The PDCA cycle is also known as Deming Cycle, the Deming wheel of CI spiral. In 'Plan phase', the objective is to plan for change, predict the results. In 'do phase', the plan is executed by taking small steps in controlled circumstances. In 'study/check phase' the results are studied. Finally in 'act phase', the organization takes action to improve the process.

Bassant and Caffyn (1994) define the CI concept as 'an organization-wide process of focused and sustained incremental innovation'. Many tools and techniques are developed to support these processes of incremental innovation. The difficulty is the consistent application of CI philosophy and CI tools and techniques. As an organization wide process, CI requires the efforts of all employees at every level.

Now, in the context of the sustained growth and diversification of higher education systems, civil society is increasingly concerned about the quality of programs offered to students. Institutions may implement schemes or evaluation mechanisms to identify and promote good teaching practices. The institutional environment of higher education institutions can also lead to enhancement of quality of the teaching in higher

education through various means. Institutions want to be recognized as providers of good quality higher education. As such, they want to find new ways of demonstrating performance. They respond to students' demand for valuable teaching: students want to ensure that their education will lead to jobs and will give them the skills needed in the society of today and tomorrow. Mobility of students and growth of fees increase the consideration given by students to the quality of the teaching.

Continuous improvement in traditional classroom-style business school education is of increasing importance given the many recent calls to improve graduate business school education (Zimmerman, 1991; Karapetrovic *et al*., 1999; AACSB, 2002), and the advent of alternative sources such as online degree programs. The rapid rise of online degree programs (Fortune, 2003; Symonds, 2003a) indicates a shift in customer perception of the value of traditional classroom-style higher education – especially among part-time working professionals. In addition, students that work full-time for a living face pressure in the workplace to deliver greater value to customers in the products and services that they supply. Not surprisingly, these students come to the classroom with similar expectations of the university.

Coincidentally supporting this situation and circumstance, Teian (1992) describes that Kaizen is more than just a means of improvement because it represent the daily struggles occurring in the workplace and the manner in which these struggles are overcome. Kaizen can be applied to any area in need of improvement.
Focusing on this statement the study will be led towards the need.

2. Introduction

Nowadays, a lot of organizations struggle with hidden problems. Some of them do not find or detect problems with quality or competitiveness, but they also cannot always find scopes and dimensions for improvement. Therefore they spend much time in search of scopes for major improvement and optimization in their processes, flows, quality, services, etc. overlooking the regular small ones what in final consequence increases cost and decreases efficiency along with profitability.

Secret of costs reduction is in something more than just to provide cheaper material, save energy or purchasing and installing "more effective" technology. It is in the matters such as management of resources and labor, systematic and continuous process improvement with waste and non-value added activities elimination, standardization, work on shortening throughout time, increasing flexibility of the company, recruiting and training employees, etc. All these things we could summarize as optimization of service, support and administrative processes and in a modern language name as implementation of "lean thinking" to the organization.
Today Educational Institutions want to be recognized as providers of good quality higher education. As such, they want to find new ways of demonstrating performance. They respond to students' demand for valuable teaching: students want to ensure that their education will lead to jobs and will give them the skills needed in the society of today and tomorrow. Mobility of students and growth of fees increase the consideration given by students to the quality of the teaching. The institutions need to develop innovative approaches to measuring the impact of their support on quality teaching. They are still struggling to understand the causal link between their engagement in teaching and the quality of learning outcomes. Exploring the correlation among inputs, processes and outcomes of higher education, calls for pioneering and in-depth evaluation instruments.

As it often says, sometimes the only one difference between good and bad company is their people. And it is often forgotten. It could be because of forgetting to one big company´s potential. It is just human potential.

Therefore, the paper is directed to look at a methodology which deals with human potential for continuous minor improvements, its utilization for company´s progress and easier sustainability of changes.

3. Methodology

The study is designed to analyze the role of the students, their expectations and experiences; role of the faculty members, departments and the universities. And will try to prove the worthiness of every suggestion for continuous improvement. Also, the study will give the institutions, their students and faculties, exclusively the chance to set out and analyze their own quality management practices and methods comparing with the Kaizen approach and philosophy. This may in turn help other institutions to improve the quality of their teaching and thereby the quality of their graduates.

4. What is Kaizen?

Term Kaizen marks the most widespread concept now a day focuses on continuous improvement of all levels of company and involves all. The term is composed of two Japanese words: KAI = change, ZEN = good. Loose translation could be a "change to the better" or "continuous improvement".

This philosophy came from Japan. Father of Kaizen is Masaaki Imai, who said, "Kaizen strategy is the single most important concept in Japanese management - the key to Japanese competitive success. Kaizen means ongoing improvement involving everyone - top management, managers and workers." Considering that Kaizen is everyone's concern, the supervising authority should also try to improve their own work. Japanese authorities generally decide to spend at least 50% of their time for the activities which are related to improving and developing. Application process of kaizen method basically consists of:

- Defining the improvement area,
- Analysis and selection of the key problem,
- Identification of the cause of improvement,
- Planning the remedial centre measures,
- Implementation of the improving project,
- Measuring, analyzing and comparison of the results,
- Standardization.

People are the "engine" of continuous improvement. Everyone is encouraged to come up with small improvement suggestions on a regular basis. This is not a once a month or once a year activity. It is continuous. It is like never ending journey. Kaizen is way of thinking, acting and moves also into personal life and thus becomes a "kind of life philosophy". This philosophy goes out from thought that tomorrow must be better than today.

5. Kaizen Philosophy

The foundation of Kaizen method consists of 5 founding elements:

1. Teamwork,
2. Personal discipline,
3. Improved morale,
4. Quality circles and
5. Suggestions for improvement.

Out of this foundation, three key factors of Kaizen arrive:

- Elimination of waste (Muda) and inefficiency
- The Kaizen 5-S framework for good housekeeping-
  a. Seiri- Tidiness,
  b. Seiton- Orderliness,
  c. Seiso- Cleanliness,
  d. Seiketsu- Standardized clean-up,
  e. Shitsuke- Discipline.
- Standardization

6. Kaizen in Higher Education

It can be effectively implemented in education as well to get great benefits in the overall development of the student and the institution as well. Kaizen is the most important strategy that was adapted by Japanese in every walk of life. The strategy revolves around the continuous improvement measures. Now the discussion will move through the way to describe how Kaizen in education can be implemented and at what measures it will be fruitful enough to have the best quality education as output.

7. Importance of Implementation

Education is vital for the overall development of a person. It is the one of the most important contributors to the success in an individual's life. The impact of education will be both in the personal and professional life. By applying the knowledge in daily life one can reach new heights in life. If a society is filled with highly educated individuals, there will be room for the adaptation of better living conditions. 'As a matter of fact, education is a continuous process where the information is processed and the resultant knowledge will be applied for the betterment of both the individual and society. In this context, Kaizen greatly aids the very purpose of education.' (Mike Wilson, 2012)

8. Potentials of Implementation

Kaizen in education is not an unheard of tactic. In fact, there are several institutions across the globe who has implemented the practices of Kaizen into their classrooms. This is the reasoning behind the constant and consistent task to strive further achievement. In addition, students that work full-time for a living face pressure in the workplace to deliver greater value to customers in the products and services that they supply. Not surprisingly, these students come to the classroom with similar expectations of the university. As a society, we were once content with a somewhat mediocre education system, however, times have changed and we are now nearing the forefront of the top educational standards in some areas and this is all will have a boost up with the implementation of kaizen in education.

9. Transformation from Present System to Kaizen

The transformation to kaizen will essentially be seamless. Its effects will be integral to the success of each student. Once a student and a university accustoms to the concepts associated with Kaizen, there will be room for greater progress and overall prosperity. 'By applying Kaizen in higher education, it is possible to figure out the outdated course plans and contents quickly and replace them or append the textbooks as per the current generation's line of thinking. By undergoing this type of transformation process, the system will be refined and improved. There will be elimination of wastage in all aspects and students will have access to the best possible material than ever before.' (Mike Wilson, 2012)

Mike Wilson (2012) also described that; students will be able to implement new things by keeping the Kaizen concept in their minds. There will not be any clash or conflict in the thinking process. Instructors will get the opportunity to reconsider even substantial teaching methodologies to seek improvement. Kaizen in the education with also help them to implement new ways of teaching whereby students will be able to grasp the teachings easily and they will be able to remember the concepts for ever. It is possible to review the way examinations are conducted. It is possible to frame exams in such a way that student's logical thinking and understanding power are traced in a better way.

10. Maintaining Consistency

As Kaizen targets opportunities to improve the process on a continuous basis, the framing of rules & guidelines will happen on a continuous basis. You will take measures to prevent failures or the breakdown of existing systems.
There will be room for the generation of new ideas. The ideas that are useful in the best interests of the overall organization will be implemented without any hesitation. There will also be continuous monitoring of the milestones that were achieved so far and remedial measures will be taken to streamline the process to achieve greater success through Kaizen in education.

11. Confronting Barriers

Academic organizations are like any other organization in that it can be difficult to obtain broad-based participation in formal process improvement activities – especially when the tools or methods are unfamiliar, and faculty are not certain if administrators truly support the activity. Indeed, faculties generally have low regard for administrators, so their ideas are routinely viewed with skepticism. Faculty also tend to have low regard for improvement tools and methods imported from industry, which some view as corrupt, and may believe that their use will conflict with the mission of the institute or the traditions of academia (Zimmerman, 1991).

In addition, administrators often explain the need for improvements and benefits of participation in a poor way (Falk *et al*., 1993; Drennan, 1999), and data revealing shortcomings in the services offered may not be collected, could be incomplete, or have not been widely disseminated among those who are in a position to make the improvements. In other words, the need to improve may not be apparent to others, and could even be contradicted by what faculty simultaneously witness first-hand.

12. Kaizen- General Findings, Thoughts & Suggestions

Based on all these discussions and analysis about Kaizen, its effectiveness and efficiency, importance, potentials and implications a short summarization of its general thoughts is prepared here:

- Right now is the worst status or situation (hypothetically every given situation is a worst one because there's always a chance of improvement).
- Kaizen ideas are unlimited (it discards conventional fixed ideas).
- Think about how something can be done and do not seek reasons why this cannot be done.
- Everything can be improved.
- Every day at least one small improvement should be made.
- To any improvement, even though there is little significance, attention must be given.
- Immediate incomplete solution is better than 100 % perfect but unimplemented solution.
- Kaizen does not need high investments.
- Problems should be welcomed, their solutions improve situation.
- Root causes should be eliminated, not just the consequences.
- Listening to others should be practiced.
- Collection of ideas from everyone and everywhere should be practiced.
- Problems should be solved in teams.
- Discipline and moral practices should be encouraged.
- Kaizen discovers talents.
- Kaizen focuses more on process than result.
- Kaizen provides immediate results.
- Kaizen does not accept solutions which are not in compliance with quality, safety and ergonomics.
- Kaizen is about creating company culture that does not tolerate waste.
- Kaizen requires strong management support and involvement.
- Kaizen's clear message is, "Do it better, make it better, improve it even if it isn't broken because if not done, you cannot compete with those who do."

13. "Real Life Case Study: Business School Degree Program

13.1 The EMP

The EMP is a part-time, 12-month, program leading to a Master of Science degree in management (Rensselaer at Hartford, 2004b). Students are high potential full-time employees and represent a broad spectrum of manufacturing and service industries, as well as state or local government within a fifty-mile radius of the Hartford campus.

Students typically have 10-20 years of business experience, often in two or more functions, and must have at least six years of management experience as well as company sponsorship to gain admission to the program. Class size ranges from 20-30 students for each cohort group.

The program is designed to prepare experienced managers for more senior leadership positions in their organizations, while the curriculum concentrates on new product and service development, management decision-making, and implementation.

The curriculum is made up of the following ten courses (Rensselaer at Hartford, 2004b):

a. Organizational behavior, design, and change;
b. Finance for decision analysis;
c. Quantitative methods for managerial decision making;

d. Marketing and product management;
e. Investment analysis;
f. Strategic information systems management;
g. Global strategic management of technological innovation;
h. Ethical, political, and legal context of business;
i. Leadership and organizational improvement; and
j. Technological change and international competitiveness.

The EMP program was selected because the students and their employers were especially demanding customers, and past implementation of improvement suggestions was both irregular and inconsistent – principally due to the lack of a structured process for achieving improvement. Based upon student feedback from formal and informal student surveys, four major categories were identified for improvement. Table I shows these items, as well as the reasons for their selection and possible pathways for improvement.

The proposal to initiate kaizen also defined management's roles and responsibilities, which included:

- senior management commitment and participation in kaizen and kaizen close-out meetings,
- communicating to every employee the benefits of participating in kaizen (talking points were provided),
- kaizen would be independent of the formal administrative performance evaluation process for professors,
- the need to obtain other data to further improve the value proposition for students and their employers, in recognition of that fact that the classroom experience is just one of many shapers of student satisfaction; and
- a small amount of funding is needed to pay for team member lunches, kaizen team shirts, etc.

Senior management, upon review of the proposal, enthusiastically agreed to this approach.

13.2 Kaizen process

The application of kaizen to improve each of the EMP courses was modified to suit the circumstances. For example, the initial kaizens were two days in duration because it was thought that the objectives could be achieved in this timeframe. However, objectives were achieved sooner, so subsequent kaizens were reduced to one day, with a second day held in reserve if needed. The same data forms used for kaizen in industrial settings were used in this activity, but with minor modifications. These forms included (Emiliani *et al*., 2003):

- pre-kaizen self-assessments, to define the current state,
- kaizen activity sheet, to define the future state,
- kaizen target sheet, to measure improvement,
- daily record, to summarize accomplishments and
- Kaizen 30-day follow-up chart, to document follow-up activities.

Kaizen teams were smaller than that normally found in industrial settings, typically five to six people from the following areas:

- Faculty member whose course was the subject of kaizen,
- Other faculty members, both subject matter and non-subject matter experts from the school of management, engineering or computer science,
- Senior manager or staff member,
- Alumni of the EMP (i.e. voice of the customer) and
- Facilitator.

Team members were solicited through presentations and via e-mail, with follow-up visits if necessary to further explain the kaizen process, the role of team members, etc. The solicitations were received favorably, and volunteers were assigned to upcoming kaizens.

The facilitators consisted of one faculty member with kaizen experience (Emiliani), and three volunteers – two management and one computer science faculty – who had expressed a strong interest in learning the kaizen process. A 25-page "Kaizen facilitators' guideline" was prepared and distributed to both facilitators and team members. The document summarized, in two pages, the scope of the project, its purpose, duration, desired outcomes, and expectations of team members, as well as the responsibilities of the facilitator, team members, and the professor whose course was the subject of kaizen. The remaining pages contained examples of how the various forms are used in the kaizen process.

One kaizen was conducted for each of the ten EMP courses between late October 2002 and March 2003. Team members received a package of information about the course, including syllabus and key instructional materials, several days before the kaizen. They were asked to review these materials in preparation for their upcoming kaizen, and formulate questions or identify improvement opportunities. Giving a copy of the "Kaizen facilitators' guideline" to all team members proved to be beneficial, as it helped them understand the purpose of kaizen, expectations, roles, responsibilities, and the schedule of activities.

The first kaizen was the authors' course, "Leadership and organizational improvement" (Emiliani, 2004b). Part of the reason for starting with this course was to identify problems related the process and data forms used, and make corrections for upcoming kaizens. At the end of each kaizen, improvement suggestions were solicited from team members and incorporated into future kaizens. Rensselaer at Hartford senior managers, faculty, and staff were invited to attend a 20-30 minute meeting at the conclusion of each kaizen to learn about the results and also suggest additional improvement opportunities.

13.3 Results

To the extent possible, improvements were made during the kaizen. Inevitably, some action items had to be completed at a later date, typically within 30 days, because they involved gathering additional information, finding different cases or journal articles to use in the course, or making changes to lecture notes or assignments. Facilitators were given responsibility for following up on action items. Table II summarizes the results of the kaizens with respect to the improvement opportunities identified.

In addition to that shown in Table II, other improvements were made including:

- Eliminated ambiguity in syllabi related to grading criteria (i.e. class participation) and assignments,
- Eliminated variation in the syllabi such as format, course description, course objectives, or the "academic integrity" statement,
- Eliminated duplicate teaching materials, such as case studies or journal articles used in two courses,
- Ensured students had enough opportunities to earn grades for the work performed (for example, change from final exam only, or mid-term and final exam, to 4-12 graded assignments); and
- Identified connections between courses to deliver a more thematically consistent
- EMP program focused on strategic thinking and leadership.

Upon conclusion of the ten Kaizens, the participants were invited to a debriefing where they were asked to share their thoughts on the process and outcomes. The benefits of kaizen that were cited include:

- Having the professor review their self-assessment, syllabus, and key course materials with team members conveyed much more information than if a faculty or staff member independently reviewed the syllabus alone;
- Professors gain a better understanding of what they are trying to accomplish in their course;
- The changes made were better aligned with student expectations;
- Team members gained a much better understanding of professors' course, content, instructional methods, etc.;
- It gave faculty, staff, and alumni and opportunity to interact together in ways that that they had not done before;
- Kaizen generated a tremendous number of new ideas for current and future use;
- Professors who participated in the kaizens as team members were energized to incorporate improvements in their course, even if it was not the subject of a future kaizen; and
- Faculty and staff viewed kaizen as a very positive experience.

Most kaizens went smoothly, but there were some difficulties. These, of course, represent improvement opportunities for future kaizens. For example, the different data forms used in the kaizens were not quite right at the start. They underwent multiple rounds of improvement based upon suggestions from team members and the facilitators.

Another opportunity for improvement pertains to the kaizen close-out meetings. The basic intent of the close-out meeting is to brief people – any employee in the building – on the improvements that were made. But it is more than that. It is a way to broaden participation, obtain additional suggestions for improvement, and demonstrate management commitment to the process. In some cases, participation in kaizen close-out meetings was low, which was perceived by kaizen team members as a lack of interest. The normal human reaction is: If people are not interested in what we did, then why do again it in the future? As noted previously, continuous improvement in traditional, classroom-style business school education is of increasing importance. Done correctly, improvement using the kaizen process is a lot of fun, and people feel like they are making valuable contributions to the school and the services it delivers.

The strength of people's desire to continuously improve affects the results achieved. Professors must be willing to improve, and the facilitator and team members – faculty, staff, management, and alumni – must willing to challenge each other in non-threatening ways towards the goal of improvement. To that end, it would also be useful to compare courses to those offered by other institutions, and engage the participation of subject matter experts from industry."

(M.L. Emiliani, *Using kaizen to improve graduate business school degree programs,* The Emerald Research, www.emeraldinsight.com/0968-4883.htm)

14. Summary

The challenges posed by university students demanding greater value in higher education, rising accreditation or re-accreditation standards, and competition between traditional non-profit and newer for-profit sources of graduate business education means that some of the traditional approaches taken to continuously improve must change. In particular, the processes used must evolve from ad hoc or confusing approaches, which frequently include lengthy delays or rework, to systematic approaches that are more responsive to ongoing changes in the marketplace. While the traditional committee-based approach commonly used to review and approve changes in graduate program structure, curriculum, etc., may have served stakeholders well in the past, there is a

growing need to replace this with processes that produce better results faster – consistent with the institution's mission.

This paper describes how Kaizen, similar to found in industrial settings, can improve a university's performance drastically. Already we have found that the kaizen process results in rapid improvement, without creating undesirable trade-offs that might negatively impact other stakeholders, such as academic freedom or students' perception of value. Because students' perception of value changes over time, the job of continuous improvement is never done. Kaizen must be repeated at regular intervals, using data from relevant sources to guide improvement activities. Doing so will ensure that the university and its programs remain competitive, and also reflect deeper individual and institutional commitment to quality, excellence, and continuous improvement. Finally, given the financial and other significant challenges that most institutions of higher education face on an ongoing basis, it would be useful if administration learned about and participated in kaizen and related systematic approaches to process improvement.

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References

[1]. AACSB (2002), Management Education at Risk, AACSB International, St Louis, MO, August, available at: www.aacsb.edu/publications/metf/METFReportFinal-August02.pdf (accessed 17 January 2004).

[2]. Bassant J and Caffyn S (1994), "Rediscovering Continuous Improvement", *Technovation,* Vol. 14, No. 1, pp. 17-29.

[3]. Deniels R C (1996), *"Profit-Related Pay and Continuous Improvement: The Odd Couple",* Engineering Management Journal, Vol. 6, No. 6, pp. 233-236.

[4]. Drennan, L. (1999), *"Total quality management in the Scottish universities",* International Journal: Continuous Improvement Monitor, Vol. 1 No. 4, available at: www.llanes.panam.edu/journal/library/Vol1No4/drennan.html.

[5]. Emiliani, M.L. (2004a), *"Is management education beneficial to society?"* Management Decision, Vol. 42 No. 3/4, pp. 481-98.

[6]. Falk, C., Brewer, P. and Brewer, V. (1993), *"Total quality management in a college of business: operations and administration",* Mid-American Journal of Business, Vol. 8 No. 2, pp. 3-12.

[7]. Imai M (1986), *Kaizen: The Key to Japan's Competitive Success*, McGraw Hill, New York, USA.

[8]. Karapetrovic, S., Rajamani, D. and Willborn, W. (1999), "University, Inc.", Quality Progress, Vol. 32 No. 5, pp. 87-95.

[9]. L. Wasilewski, *Kaizen: Secret of Japanese success*, ZETOM Published, Warsaw, 1997.

[10]. M. Imai, Gemba kaizen. A commonsense, low-cost, approach to management, Kaizen Institute, Warsaw, 2008.

[11]. Mike Wilson (2012), *How to introduce Kaizen philosophy in education?* Available at: http:// blog.creativesafetysupply.com/

[12]. M.L. Emiliani, *Using kaizen to improve graduate business school degree programs,* The Emerald Research, www.emeraldinsight.com/0968-4883.htm

[13]. Newitt D J H (1996), *"Beyond BPR and TQM—Managing the Processes: Is Kaizen Enough?",* Proceedings of Industrial Engineering, pp. 1-5, Institution of Electric Engineers, London, UK.

[14]. Reid R A (2006), *"Productivity and Quality Improvement: An Implementation Framework",* International Journal of Productivity and Quality Management, Vol. 1, Nos. 1/2, pp. 26-36.

[15]. Teian K (1992), *Guiding Continuous Improvement Through Employee Suggestions*, Productivity Press, Portland, US.

[16]. Watson M (1986), *The Deming Management Method*, Perigee Books.

[17]. Wickens P D (1990), "Production Management: Japanese and British Approaches", *IEE Proceedings Science, Measurement and Technology,* Vol. 137, No. 1, pp. 52-54.

[18]. Zimmerman, W.J. (1991), "Kaizen: the search for quality", The Journal of Continuing Higher Education, Vol. 39 No. 3, pp. 7-10.