



AGENA INDUSTRIAL AND CONSTRUCTION COLLEGE

**ASSESSMENT OF KAIZEN IMPLEMENTATION
PRACTICES AND CHALLENGES IN THE CASE OF
AGENA INDUSTRIAL AND CONSTRUCTION COLLEGE**

By: ISRAEL MOLTOTAL

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Acknowledgement

Abstract

Different countries in the world applied Kaizen Management ways as a tool to increase effectiveness, efficiency, productivity, quality and to decrease wastage. There's no studies show the condition of KAIZEN implementation in surrounds of Agena construction and industrial college in Gurege Zone. Its implementation and sustainability in TVET Colleges has been facing different problems and encountered by various factors affecting practice of kaizen. In regarding with the college there isn't a pointers or distributors of symbols that leads the client towards the specific area. So in order to know the challenge of kaizen implementation and sustainability in the colleges it needs to be assessed. To achieve the purpose of the research, descriptive research design system was employed and mixed approach were practiced (qualitative and quantitative).

Primary and secondary source of data were employed. To assess these study 86 repliers were taken as a target population. Some of the challenges that face kaizen implementation in sustainability were lack of awareness and lower sense of responsibility, lack of college management support, lack of team work culture, lack commitment, no progress or follow-up and Meetings with Kaizen coordinator or facilitator, lack of reward and recognition, Lack of Proper resource utilization, waste concentration in compound, standardize is not taken as a culture, unwanted items in the compound did not removed and no clear goal of kaizen in the college. Best mechanisms to alleviate challenge of kaizen sustainability put by researcher, Arrange short term training program to trainers and employees, take as culture best resource utilization mechanism, Plan and create awareness to new trainers and administrative staff about kaizen, Develop regular auditing, recognizing, awarding mechanism best performer, Develop mechanism of follow up, setting regular meeting program with management and develop methods for continuous implementation of kaizen.

Key words: - kaizen, work area character, pillar of kaizen.

Acronyms

EKI: - Ethiopian kaizen institute

GRIPS: - Graduate Institute for Policy Studies

JICA: - Japan International Cooperation Agency

PASDEP: - Plan for Accelerated and Sustained Development to End Poverty

SME: - Small and micro enterprise

TQM: - Total Quality Management

TVET: - Technical vocational education training

Table of Contents

Acknowledgement	i
Abstract	ii
Acronyms	iii
CHAPTER ONE	- 1 -
INTRODUCTION	- 1 -
1.1. Background of the Study	- 1 -
1.2 Statement of the problem	- 4 -
1.4. THE SCOPE OF THE STUDY	- 6 -
1.5 Significance of the study	- 6 -
1.6 Limitations of the Study	- 6 -
1.7 Organization of the Study	- 7 -
1.6. Definition of terms	- 7 -
Chapter Two.....	- 8 -
Literature Review.....	- 8 -
2.1. Conceptual Overview and Definitions of Kaizen.....	- 8 -
2.2 PHILOSOPHY OF CONTINUOUS IMPROVEMENT (CI)	- 10 -
2.2.1 Continuous Improvement Philosophy - a systematic approach	- 10 -
2.2.2 The evolution of Continuous Improvement.....	- 11 -
2.3. Benefit of Kaizen	- 13 -
2.4 Pillars of Kaizen	- 14 -
2.4.1 Housekeeping / 5s.....	- 14 -
2.4.2 Waste (Muda) Elimination	- 15 -
2.4.3 Standardization	- 16 -

2.5 Kaizen practice and Implementation.....	- 16 -
2.5 The Relationships between Kaizen Implementation and Reward and Recognition	- 18 -
2.6 Roles of Management and Employees in Implementing Kaizen.....	- 19 -
2.7 The 5s Formwork Place Organization	- 20 -
2.8 Policy Deployment	- 21 -
2.9 Kaizen Method	- 21 -
2.10 Preconditions Necessary to Implement Kaizen Training	- 22 -
2.11 Gap Analysis	- 22 -
2.12 Ethiopian Experience of Kaizen.....	- 23 -
2.12.1 Needs of Kaizen in Ethiopia.....	- 24 -
2.12.2 Stakeholders Participation in Implementing Kaizen Strategy	- 25 -
2.12.3 Work Area Characteristics	- 26 -
2.12.4 Post-Event Characteristics.....	- 26 -
Chapter three.....	- 27 -
Methodology	- 27 -
3.1 Research Method.....	- 27 -
3.2. Sources of Data	- 27 -
3.2.1. Primary Sources of Data.....	- 27 -
3.2.2. Secondary Sources of Data.....	- 27 -
3.2.3 SAMPLE SIZE DETERMINATION.....	- 28 -
3.2.4 Data Collecting Instruments.....	- 28 -
3.2.4.1 Questionnaire.....	- 29 -
3.2.4.2 Interview	- 29 -
3.2.4.3 Observation	- 29 -
3. Method of data analysis	- 29 -

3.1 Response Rate	- 29 -
Chapter Four	- 31 -
4 Presentations, Analysis and Interpretation of Data	- 31 -
4.1. Demographic Characteristics of the Respondents.....	- 31 -
4.2 Respondents rating on challenge of kaizen sustainability.....	- 33 -
4.3 Work area characters of sustainable implementation of kaizen	- 35 -
4.4 Post event characters of sustainable kaizen implementation	- 37 -
Chapter Five 5.....	- 41 -
Summary, Conclusion and Recommendation.....	- 41 -
5.1 Conclusions.....	- 41 -
5.2 Recommendations	- 42 -
5.2.1 Recommendation for College deans/vice deans.....	- 42 -
5.2.2 For material management department	- 43 -
5.2.3 For the main kaizen team / focal person/institutional capacity building vice dean of the College	- 43 -
5.2.4 For department heads and trainers	- 44 -
Reference	- 45 -
Appendix	- 47 -

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The Kaizen management originates in the best Japanese management practices and is dedicated to the improvement of productivity, efficiency, quality and, in general, of business excellence. The Kaizen methods are internationally acknowledged as methods of continuous improvement, through small steps of the economical results of companies. The small improvements applied to key processes will generate the major multiplication of the company's profit while constituting a secure way to obtain the clients fidelity (Romania, 2008) Kaizen has become a global activity spread by multinational companies and their employees. It has become popular not only in the manufacturing sector but also in the service sector. However, propagation of kaizen in Africa is still very small due to the limited number of players who bring in the practice. Since individual companies cannot be a major force in transferring kaizen, the activities of organizations are considered vital in transferring the kaizen method to Africa (GRIPS Development Forum, 2009).

Different countries in the world applied Kaizen Management ways as a tool to increase efficiency, effectiveness, Productivity, quality and to decrease wastages. The operation of Kaizen going as tool of effectiveness in product cost at Coca Cola Bottling Company in Indonesia has been practiced (Utari, 2011). In Canada, there's an operation of Continuous Improvement (CI) of Kaizen philosophy which consists of improvement initiatives that increase successes and reduce failures (Bhuiyan and Baghel, 2005). In the same light, Becker and Snow (1997) set up out that the United States of America has used the Deming Management Method or the Total Quality Management (TQM) of the Kaizen Techniques.

According to National Graduate Institute for Policy Studies (GRIPS) Development Forum publication (2011), kaizen was driven by strong commitment of the top leader. During the two-year period of Japan International Cooperation Agency (JICA) support(on the study Quality and Productivity Improvement in Ethiopia, from October 2009 to May 2011), pilot company projects were implemented, and their results have been disseminated; the JICA experts conducted 2 training for the staff of the Kaizen unit of Ministry of Industry (MOI) to transfer relevant skills and

techniques; and a national plan has been formulated to disseminate kaizen activities for manufacturing companies. As a result, kaizen has come to be known among policy makers and business managers in Ethiopia. Based on these achievements, the Ethiopian government has decided to establish a core organization responsible for quality and productivity improvement, EKI. JICA has begun new support the institutionalization of the EKI in such areas as organizational development, human resource development, and nationwide dissemination of Kaizen.

Generally benefits of KAIZEN management practices includes immediate results, waste reduction, improvement in all areas, decreasing the general production costs, sustainable improvement of quality, delivery deadlines, working conditions, motivation and involvement of employees in the continuous improvement of any institutes performance, ensuring discipline and standardization. KAIZEN practice helped many firms in India to achieve better operational excellence and improve their productivity (Endale, 2016). Nowadays, all institutions implementing KAIZEN in micro and small enterprises to improve their productivity, service deliverance and creating labor competitiveness in the local and international level as well as increasing colleges performance.

Dissemination route of kaizen through vocational institutions shall be vital. Vocational institutions provide for a wider array of beneficiaries among workers in the manufacturing sector than in other types of institutions in Africa (Sanyu Consultants Inc. and KRI International Corporation, 2008). To achieve PASDEP (Plan for Accelerated and Sustained Development to End Poverty) and solve the socio economic problems, the government of Ethiopia, in collaboration with the Industrial Development Strategy and other sector development strategies, launched a comprehensive capacity building and human capital formation known us the National TVET Strategy. Since the key objective of the PASDEP is to commercialize agriculture and economic growth and development through job creation and reduction of unemployment, TVET (Technical Vocational Education and Training) plays a tremendous role in providing relevant and demand driven education and training that corresponds to the economic and social sector for employment and self-employment (TVET Strategy, 2008 E.C).

The low level of skilled human resource has a significant effect on the development of the industrial sector. Therefore, the country needs to educate and train its workforce to the international standards to increase TVET contribution to the industrial development and on building a culture of entrepreneurship and preparing the people for self-employment (Yikunoamlak, 2000). TVET

address competence needs in existing companies and provide an adequately competent workforce necessary to attract new investments; the urban and semi-urban micro and small business sector. TVET is geared towards enhancing productivity in the MSE sector, improving the quality of products and services and supporting start-up businesses by providing training and serving as centers for technology transfer; TVET institutions are mainly expected to replicate new and selected technologies and transfer the same to the relevant industry in order to increase the competitiveness of the sector according to international standards. It's also needed that these technologies focus on creative capacity building and greatly contribute to the economic development of the country in a bid to mitigate regional problems. Their benefit will be significant since the trainees who pass through this process are endowed with outstanding and international workforce ethics (TVET Strategy, 2008 E.C). To attain the TVET strategy and to be productive, Agena construction and industrial College applies different techniques and methods that are accepted in the international standards. Some of these are ISO and Kaizen. It is not too difficult to introduce something new into an organization. The difficult part is how to keep it going and maintain the momentum once it has been introduced. Many companies have tried to introduce kaizen as quality circles, reengineering, and lean production. While some of them have been successful, most have failed to make such a project a going concern. For instance, many Western companies introduced quality circles by involving employees but most companies have simply given up the idea of quality circle activities by now as a way to improve quality, cut cost and speed products to market (Thessaloniki, 2006). A major obstacle for many organizations is to actually sustain or improve the results of a Kaizen event after it concludes (Friedli, 1999; Mackle, 2000; Cork, 2004). Infact, Laraia (1999) report, many organizations find great difficulty in sustaining kaizen over time, even 50% of the improvements initially realized at the conclusion of the event. Empirical research of Kaizen events suggests that the rate of sustainability may be even lower than 50%. Moreover, in one recent study, three of the eleven (27%) Kaizen events studied were unable to sustain any of the changes that were implemented during the Kaizen event (Burch, 2008). Sustaining kaizen event is one of the critical concerns facing Ethiopia. Many organizations including Agena construction and industrial College face difficulties to sustain or improve upon the results of a Kaizen event after it concludes.

According to college report, (2013 E.C) in the budget year the college within its respective institutions supported KAIZEN implementation and other industry extension packages, more than

200 micro and small enterprises were supported by college trainers which engaged in manufacturing, construction, electro technology, construction departments as a policy intervention solutions for low competitiveness youth creation and low productivity in Edja woreda by Agena construction and industrial college 2013/2014. Among these department and the colleges performance regarding with kaizen implementation in different staff are low. However, the government introduced the philosophy of KAIZEN, there is no studies shows the condition of KAIZEN implementation in contexts of Agena construction and industrial college in Edja woreda. Even though, kaizen - brings tangible result in different TVET institutes; sustaining kaizen event not grow to be continuous activity. Implementation of a Kaizen faces difficulties to sustain results of event after it concludes. This practically made the college to decrease in efficiency, quality and productivity. Therefore the purpose of this study was Assessing of the Practices and Challenges of Kaizen Implementation in Edja woreda in case of Agena construction and industrial college.

1.2 Statement of the problem

In Ethiopia, there are the practices of both Western and Japanese Management techniques, like Business Process Reengineering (BPR), benchmarking, Balanced Score Card (BSC) and Kaizen (Berihun, 2009). So far, there have been limited and inconclusive studies conducted on the implementation of Kaizen in business organizations at different levels in Ethiopia. NesraSeid (2012), for example, conducted a quantitative study on the role of the Ethiopian Government in implementing Kaizen as a modern management tool for quality and productivity at Kadisco Chemical Industry in Addis Ababa. The findings of this study indicated that the implementation of the Kaizen policy was found to increase labor productivity by reducing, on average of 50%, time wastage for searching tools; improved a defect ratio which ranged from 50% to 70%; and improved lead time in the range of 16% to 90%. The researcher thus concludes that the implementation of Kaizen at Kadisco Industry has brought those benefits.

However, challenges in sustaining kaizen event were one of the critical concerns facing Ethiopia. Many organizations including Agena construction and industrial College face difficulties to sustain or improve upon the results of a Kaizen event after it concludes. According to researchers observation supervision team feedback in 2012 E.C., Even though, kaizen - brings tangible result in different TVET institutes; sustaining kaizen event not grow to be continuous activity. And Kaizen focal person of Agena construction and industrial College also reports that it faces difficulties to sustain results of a Kaizen event after it concludes. This practically made the college

to decrease in efficiency; quality, and productivity. Goal clarity is positively related to team member perceptions of their Kaizen capabilities and attitudes toward Kaizen events (Farris, 2006; Farris, 2009). Goal difficulty is positively related to team member perceptions of their Kaizen capabilities and negatively related to goal achievement and team member perceptions of the impact of the Kaizen event on the work area (Farris, 2006; Farris, 2009). Including people from all functions required to implement and sustain results on the Kaizen event team (Bradley and Willett, 2004; Vasilash, 1993; Adams , 1997) .Facilitator participation in decision-making may positively influence team member-participation in decision-making and may positively influence Kaizen event outcomes and sustainability (Burch, 2008). Management support is positively related to team member .Perceptions of the impact of the Kaizen event on the work area and their attitudes toward Kaizen events (Farris, 2006; Farris, 2009). Resource support positively influences Kaizen event outcomes (Devens. 2008) and sustainability (Bateman, 2005).

KAIZEN implementing package is focused on improving productivity, quality, cost reduction, quick delivery, establishing safety and raising workers moral in order to achieve better customer satisfaction and maximize the success of the enterprises.

The Kaizen system as new to the country and no research has been done in The Kaizen system as new to the country and no research has been done in the woreda on this topic before. So, its implementation and sustainability in TVET Colleges has been facing different problems and encountered by various factors affecting practice of kaizen. If these problems and affecting factors are not solved, the attempt of the Government to introduce, implement and sustain Kaizen will remain futile. Furthermore, PASDEP strategy on the part of the College of becomes fruitless.

Thus, challenges that have been found to affecting Kaizen practice in the College should properly be assessed and effectively addressed. By so doing, the institute move towards efficiency, productivity and quality to achieving the PASDEP on the part of the College.

In regarding with the college there is not an indicators or distributors of symbols that leads the customer towards the specific area, there is an outdated training materials in college compound, low shop standard of some departments like construction, untraceable work environment in the college are some problems that seen. So in order to know the gaps challenge of kaizen implementation and sustainability in the colleges it needs to be assessed.

To address the above problem the following research questions were developed

1. What are the challenges that affect the implementation of Kaizen in Agena construction and industrial College?
2. What work area characteristics do affect the sustainability of Kaizen event outcomes in Agena construction and industrial College?
3. What are the post characteristics of kaizen implementation practice?

1.4. THE SCOPE OF THE STUDY

Delimiting a research project using specific location, population, time frame, or issue to be investigated helps the researcher to focus the center of attention and address the research problem in a resource and time efficient manner.

1.5 Significance of the study

This study thought to be valuable and important for stakeholders such as TVET institutes, TVET Bureau. Specifically the findings of the study will have the following contributions:

The research findings assists TVET institutes in identifying problems that challenging implementation sustainability of Kaizen event and to take appropriate measures in order to maintain their effectiveness, productivity, quality, efficiency and decrease wastages.

The research results help stakeholders within the TVET programme, mainly researchers, educators and implementers to improve the current practices to sustain the Kaizen implementation especially for Agena construction and industrial college. It can become a baseline for further investigation for other researchers that focus on the Kaizen event sustainability.

The study can make an important contribution for policy makers or strategy developers of relevant sectors, in the task of identifying the factors affecting practice and sustainability of kaizen events in Agena TVET institutes , and provides a clear picture to include those empirical results in the future policy or strategy.

1.6 Limitations of the Study

In conducting this research there were some limitations. The difficulty of accessing adequate and up-to-date information and references to support the study, lack of network access, lack of budget, difficult to get recent and important literature in sustaining kaizen, there was lack of willingness to actively participate in the study on few of the key informants vice deans, trainers, lack of transportation to gather data from branch college, low willingness of some respondents to fill all the questions properly. However, problems were overwhelmed by the researcher commitment

using different mechanisms accordingly, for instance searching better network areas and downloading relevant books from the internet, using time management mechanisms, endurance to get important information. And so on.

1.7 Organization of the Study

This action research is organized into five chapters. Chapter one, which is the introduction to the study, includes background to the study, statement of the problem, research questions, objectives of the study, significant of the study, limitations of the study and organization of the study. Chapter two review of related literature enclosed in Kaizen. The third chapter describes the research design and methodology, target population and sampling, data collection instruments, methods of data analysis an ethical concerns considered in the study. Fourth chapter presents both quantitative and qualitative data, their analysis, findings and interpretation. Finally, Chapter five puts together summary of major findings of the study, conclusions and recommendations

1.6. Definition of terms

Kaizen - a Japanese word meaning Kai (change), Zen (good), continuous improvement. It's also

Muda - a Japanese word meaning waste or non-value adding activities liken motion, inventory, rejects, over production and waiting.

Mura - A Japanese word meaning irregularity and variability. Not standard.

Muri - A Japanese word meaning strain and difficulty.

Standard - Is the best way to do a job, a set of policy, rules, procedure.

Quality - Is conformance to specification and customer requirement.

Training - planned process to modify attitude, knowledge, skills or behavior

Chapter Two

Literature Review

2.1. Conceptual Overview and Definitions of Kaizen

In the decade of 1980, management techniques focusing on employee involvement, and empowerment through teamwork approach and interactive communications and on improving job design were not new, but Japanese companies seemed to implement such techniques much more effectively than others. The business lesson of the 1980's was that Japanese firms, in their quest for global competitiveness, demonstrated a greater commitment to the philosophy of continuous improvement than Western companies did (Bowles, 1991). For such a philosophy the Japanese used the term Kaizen. Kaizen means continuous improvement involving everyone in the organization from top management, to managers then to supervisors, and to workers. In Japan, the concept of Kaizen is so deeply engrained in the minds of both managers and workers that they often do not even realize they are thinking Kaizen as a customer-driven strategy for improvement (Imai, 1986). This philosophy assumes that our way of life – be it our working life, our social life or our home life – deserves to be constantly improved (Imai, 1987). There is a lot of controversy in the literature as well as the industry as to what Kaizen signifies. Kaizen is a Japanese philosophy for process improvement that can be traced to the meaning of the Japanese words ‘_Kai’ and ‘_Zen’, which translate roughly into ‘_to break apart and investigate’ and ‘_to improve upon the existing situation’ (www.kaizen-institute.com). The Kaizen Institute defines Kaizen as the Japanese term for continuous improvement. It is using common sense and is both a rigorous, scientific method using statistical quality control and an adaptive framework of organizational values and beliefs that keeps workers and management focused on zero defects. It is a philosophy of never being satisfied with what was accomplished last week or last year (Barnes, 1996).

Kaizen is a Japanese word that has become common in many Western companies. Kaizen culture an organizational culture based on the three super ordinate principles; namely process and results, systemic thinking, nonjudgmental and non-blaming (Mullins, 2010). The word indicates a process of continuous improvement of the standard way of work. It is a compound word involving two concepts: Kai (mean change) and Zen (mean for the better). The term also comes from ‘_Gemba Kaizen’ meaning ‘_continuous improvement’ (CI). Continuous Improvement is one of the core

strategies for excellence in production, and is considered vital in today's competitive environment (Robinson, 1991). It calls for endless effort for improvement involving everyone in the organization.

The ideas of kaizen philosophy implement as continuous improvement of organizational attitude and the approach on the purpose of doing business. It is the key thrust to maintaining or achieving competitive advantage through a well-managed, dynamic change process. It is customer focused, ever changing, and maximized when all associates use Kaizen to achieve the primary quality, cost, delivery, safety, and morale goals. Its assumption lies in the Buddhist understanding of life to be inherently the experience of suffering. (According to this school of thought, humans undergo suffering because everything is the result of ever- changing and interrelated conditions and causes. Our confusion and suffering will come to an end, when the causes of our suffering are identified and extinguished. (Gembutsu Consulting, 2008). The Kaizen philosophy assumes that our way of life—be it our working life, our social life, or our home life—should focus on constant-improvement efforts.....In my opinion, Kaizen has contributed greatly to Japan's competitive success (Imai, 1997).Kaizen is the main pillar of TQM (Total Quality Management) or TPM (Total Productive Maintenance), and its emphasis lies with continuous process improvement. The most effective way to achieve Kaizen is for worker themselves to be highly motivated to implement to improvement production methods and products. Suggestion systems, QC circle and self-management are typical methods to motivate workers to achieve Kaizen according to Ethiopian Kaizen Institute, (2013: 36&39).

Kaizen means —continuous improvementll involving the entire workforce from the top management to middle managers and workers. Imai (1986) argued that, it is not just a management technique but a philosophy which instructs how a person should conduct his or her life. Kaizen shows how management and workers can change their mindsets together to improve their productivity. Imai farther argues that kaizen is an umbrella concept for a large number of Japanese business practices, such as 5S, including suggestion system, Quality Control Circle (QCC), Total Quality Management (TQM, the Just-in-Time System.

2.2 PHILOSOPHY OF CONTINUOUS IMPROVEMENT (CI)

Continuous improvement means development of the business itself, it affects to the company strategy as a whole. As a matter a fact, it is a change management discipline including methodologies and principles. It can be called as a philosophy. Actual business case determinates how deep this philosophical aspect would be. Usually when determining the depth of the change, business operatives should know what the goal of the change is and how their organization is going to benefit with that change. The need for the change will arise, when organizations realize the business should be more profitable or there is some kind of forced demand for cost cutting. Improvement work would begin, when the organization will begin to feel pressure for change that comes e.g. from customers, owners or perhaps financial curves are not showing enough positive direction. Owners have the power to send signals to board of directors and then whole organization might get claims and request to improve company's economic state and this causes a situation, where leaders are forced to start the change in order to improve production or operations to cut costs to get better efficiency. However, sometimes these signals can touch the entire organization or just some departments of it. In some cases, re-shaping activities can touch processes or projects, so that they would achieve better effectiveness and cost handling. These signals might be based on some external changes on that business e.g. variation among customers or kind of material or delivery problem. Then organization has to improve their business process based on these signals and give better answer to these market variations. Basically, when company is able to give response quickly enough into any market demand, they evidently will get better business alignment in the market. This context leads for discussion about production, productivity and profitability. These three issues have a strong connection with the business itself. Productivity and profitability are business measures and for example productivity growth with profit rate informs how profitable the company, the business or the production is. This chapter concentrates mainly for CI at production management framework. However, all these theories presented in chapter 2 are important to understand also when looking continuous improvement philosophy and its methods from operations management perspective.

2.2.1 Continuous Improvement Philosophy - a systematic approach

Understanding Continuous Improvement Philosophy (CIP), is good to remind what have been learned before and what kind of success is possible to reach using this philosophy and its methods or tools. When decision makers are analyzing business charts like productivity statistics and profit

figures, they would like to see their organization to be more efficient and nimble for improvement in common. In some case business leaders would like to hire consultants outside from the company to search the truth and to find out any possible ways to the perfection. More likely company wish is to find a ‘philosopher stone’ or just perfect solution, which would be the answer to fix all of these problems of the business. But there is no short track to the success. In any case it is good to know that there are lot of examples what continuous improvement means and how to use it successfully – the history can teach us a lot and especially studying the history of Japanese industrial development for example Toyota Motor Company’s production philosophy. Toyota Motor Company had no excessive capital, even so the company wanted to improve their production and the business with no money. The base of continuous improvement processes and methods are well documented.

2.2.2 The evolution of Continuous Improvement

According to Burton (2015) CI has been adduced in many successful business stories from 19th century till 20th century, so it is good to know and understand what kind of success expressions it may produce. Some forms of CI activities were already in use during the time of Industrial Revolution I, when manufacturing was a craft based work executed by skilled artisans from late 17th century until late 18th century.

Schroeder and Robinson (1991) states during common standardization and mechanization development phase, highly trained artisan based work started to change towards to direction, where the work itself was going to be operated by machines. During that change workers were not needed anymore to be trained or educated, so the work itself industrialized and production methods and processes came to more complex. The need for skilled workers were not dominant anymore and the machine operated production pace rose to the next level. However, amount of errors, over production and wasting products or material losses influenced a lot to the process quality.

One solution to solve this complexity, were introduced by Frederick Taylor and Frank Gilbreth, whom applied objective scientific method to fix up the complexity. This method authorized all responsibility for management. Improvement methods, problem solving and cost reduction operations was now restricted to the upper management and workers in production were not involved in or aloud to solve the problems. Improvement work was just eliminated from production floor, unfortunately but true production floor (shop floor) had all direct knowledge about process problems. ‘Thinking’ and ‘Doing’ was separated from each other and workers faced inconsistent

disenfranchisement practices during that era. However, 1901 Frederick Taylor's student Henry Gantt concluded in his white paper; that production workers should be reintroduced into the improvement process and to be as participants of continuous improvement process. He introduced a theory about paying some compensation against new improved methods and ideas should be carried on so other workers can adapt and take this improvement in use. All the way this idea was the beginning of modern continuous improvement program management. (Henry & Mayle 2002, 230-232.) During early nineteen's CI developed and changed its gown, remarkable was it was applied in different places in the world. From time to time global world had been facing crisis like convulsion of nature, industrial changes and wars. This time was quite chaotic indeed. Automotive industry faced Second Industrial revolution in early 19s until the start of World War I. During this time serial production speeded up and war time production used this method heavily. Mass production started to grow in 1930 and continued further until Second World War was evident. This time was hectic for several industrial fields, which tried to tune their serial production to the next level and serve nations during their struggle. After World War II, the world needed very strong reconstruction activities. Countries had to develop their industrial presence again and one of them was Japan. Japanese industry needed new direction and Edward J. Deming with other specialists was invited to the Japan. Their economy was in bad condition and industrial structure needed help for recovering it back to the map. US government and the occupation army had some plans to help this process and then they sent number of scientists and specialists to the country to create a program of activities for reconstructing purposes. Deming's work began late summer 1950 at the Hakone Convention Center where he presented his Statistical Product Quality Administration program to Japanese leaders. His speech invented new ideas about production. Deming told how important is to improve and to reach product quality and what this kind of activity really serves. Deming introduced his fourteen philosophical points to be a new start for industrial transformation. His model was based on quality issues and especially how to improve quality in manufacturing process. Deming also presented his transcription of waste, what is the waste and how to eliminate waste? He linked this information for activities to gain faster production and also presented what economic production really means and improvement work should also touch sales and after sales activities with customer support. (Hunter 2012.)

2.3. Benefit of Kaizen

To build ownership and establishing the acceptable working culture / environment because kaizen relies heavily on a culture change that encourages suggestions by operators who continuously try to incrementally improve their jobs or processes, continuous improvement in a sustainable manners; To determining capital cost projects; To involve slow but steady incremental improvements; To create participatory approach on creativity and arrange work-shop setting to minimize time wastage during producing goods; and to create zero defect production in the production line (Federal TVET Bureau ,2014). When kaizen implemented in TVET College the main aim were not only increasing productivity, quality, trainer's capacity but also in their work culture has a relationship to MEBs and to help MEBs in their shads/workshop by implementing kaizen with the members of MEBs (AA TVET, 2010). As Luecking (2009) kaizen is a daily activity, the purpose of which goes beyond simple productivity improvement. It is also a process that, when done correctly, humanizes the workplace, eliminates overly hard work and teaches people how to perform experiments on their work using the scientific method and how to learn to spot and eliminate waste in organizational processes.

The right steps properly applied, any company, no matter what its nationality, can benefit from kaizen. Kaizen Fundamentals are: Employee empowerment, Self-discipline and Recognition. Thus not only the colleges but also any other organization implement kaizen management philosophy has a benefit from its staff member work satisfaction beyond profitability of the organization. Kaizen involves every employee in making change—in most cases small, incremental changes. It focuses on identifying problems at their source, solving them at their source, and changing standards to ensure the problem stays solved. These continual small improvements add up to major benefits. They result in improved productivity, improved quality, better safety, faster delivery, lower costs, and greater customer satisfaction and so on (Imia,1997). Since the benefits of kaizen principles come gradually and its effects are felt usually on a long-term basis, it is obvious that kaizen can succeed only under top management that has a genuine concern for the long-term health of the company (Imai, 1986). If management makes positive use of the process-oriented way of thinking to support innovation and further reinforces it with a kaizen approach, it will find that the company's overall competitiveness will be improved in the long run.

The benefits of kaizen include the participation of all collaborators in improving and transforming (evolving) the organization in small, every-day, incremental steps that do not lose effectiveness

over time. Implementing kaizen is believed to have benefits. These include: improves profit, Improves customer satisfaction, discovers hidden talents, promotes self- development, improves the motivation and morale of employees at each level, enhances communication between top bottom level, helps to build and improve team work, creates ownership and trust within each other, reducing waste, proper use of time by making proper layout of the machinery getting space and the setup of the entire enterprise premises, engages and empowers employees at all levels, and improves the overall work environment (EKI ,2013) The process of finding material was found to take 10-15 minutes before arrangement, materials hidden and poor - cleaning; hidden materials were found, created conducive environment and time saved; problem of installation solved; after the installation conducive, visible and safe environment created; the warehouse was re-arranged and all materials were situated in a clear visible area; and the garbage was prepared and situated in a specified areas of the shop in the College. The content analyses of available documents substantiate the presence of successful implementation of kaizen strategy in the bole manufacturing College , With regard to productivity increment, unlike before, workshops and machineries are organized in a structural way to ease production; the practice of leaving conducive working space was found to be suitable for proper production of materials; ventilating the workshops and made them conducive working environments; and waste storage bins were prepared to keep workshops clean (bole manufacturing college 2011 E.C report)

2.4 Pillars of Kaizen

According to Imai (1986), in kaizen management philosophies and practices, the three pillars of kaizen are summarized as follows: (1) housekeeping, (2) waste elimination and (3) standardization and as he stated as, the management and employees must work together to fulfill the requirements for each category. To be ensured success on activities on those three pillars three factors have also to be taken account. Those are: Visual management, the role of the supervisor, and the importance of training and creating a learning organization.

2.4.1 Housekeeping / 5s

As Schonberger (1996), housekeeping is a process of managing the work place, known as —Gembal in Japanese, for improvement purposes. Other writer also indicates that Imai (1997) introduced the word —Gembal, which means —real placel, where value is added to the products or services before passing them to next process where they are formed. So the idea of —the right things to the right placel is the requirement of Gemba in the learning department of the colleges

after finishing the training sessions. As technology transfer and extension service manual of Addis Ababa TVET Agency in 2010 stated that, 5s is a system of steps and procedures that can be used by individuals and teams to arrange work areas in the best manner to optimize performance, comfort, safety and cleanliness. Other writers like Foss (2004) citation, 5s is a philosophy and checklist for good housekeeping to achieve greater order, efficiency and discipline in the workplace. Thus applying 5s in the learning department are important for the trainees, trainers and the college's community to use time, energy and material effectively. Additionally the training system will be facilitated in smooth and attractive way. Benefits of applying 5s in any organization, to the employees advised by Imai (1997) are:- Creates cleanliness, sanitary, pleasant, and safe working environments; it refresh work place —Gemball and greatly improves employee morale and motivation; it eliminates various kinds of waste by minimizing the need to search for tools, making the operators' jobs easier, reducing physically exhausting work, and freeing up space; it creates a sense of belonging and love for the place of work for the employees.

It needs everyone to maintain 5S guidelines. To maintain discipline, we need to practice and repeat until it becomes a way of life. Discipline means making a steady habit of properly maintaining correct procedure. Time and effort involved in establishing proper arrangement and orderliness will be in hopeless if we do not have discipline to maintain it. If we do not do 5S, we can't do any other work efficiently. They are features which are common to all places and are the indicators of how well an organization is functioning. Thus kaizen involves setting standards and then continually improving those standards. To support the higher standards kaizen also involves providing the training, materials and supervision that is needed for employees to achieve the higher standards and maintain their ability to meet those standards on an on-going basis.

2.4.2 Waste (Muda) Elimination

As Berk (1993) citation, Muda in Japanese means —wastel. The resources at each process, people and machines either add value or do not add value and therefore, any non-value adding activity is classified as Muda in Japan. Work is a series of value adding activities, from raw materials, ending to a final product. Muda is any non-value added task.

Wastes are one means of productivity loss mechanism. So, to increase the production quality and quantity must apply wastes reduction methods in the working area. As Cantor (1997) stated that, the main seven types of waste in the working area especially in manufacturing plants are: - overproduction, excess inventory, waiting, transporting, defect-making, unnecessary motion, and

excess processing. But for the administrative office Muda are:-Passing on work that contains errors, Signature approvals, bureaucratic, walking or routing documents, copies files, a lot of papers and excess documentation. As a result try to eliminate those wastes to increase their profits like save time, money and capitals (land, labor and human power).

2.4.3 Standardization

According to Kilian (1992) standards are set by management, but they must be able to change when the environment changes. Companies can achieve dramatic improvement as reviewing the standards periodically, collecting and analyzing data on defects, and encouraging teams to conduct problem-solving activities. Once the standards are in place and are being followed then if there are deviations, the workers know that there is a problem. Then employees will review the standards and either corrects the deviation or advice management on changing and improving the standard. It is a never-ending process and is better explained and presented by the PDCA cycle (plan-do-check-act), known as Demming cycle (Kilian, 1992).

2.5 Kaizen practice and Implementation

Kaizen implementation is not once in a month or once in a year activity. It is continuous. Imai (1997) expressed that the rate of the worker participation in terms of providing important suggestion for their organization and Japanese companies, (such as Toyota and Canon, a total of 60 to 70 suggestions per employee per year are written down, shared and implemented). In most cases these are not ideas for major changes. Kaizen is however, based on making little changes on a regular basis namely, always improving productivity, safety and effectiveness while reducing waste. Suggestions are not limited to a specific area such as production or marketing. Kaizen is generally based on making changes anywhere that improvements can be made.

A Western philosophy may be summarized as; they say goes if it isn't broken, don't fix it." The Kaizen philosophy is to "do it better, make it better, and improve it even if it isn't broken, because if we don't, we can't compete with those who do." Kaizen in Japan is a system of improvement that includes both home and business life. Kaizen even includes social activities. It is a concept that is applied in every aspect of a person's life. In business Kaizen encompasses many of the components of Japanese businesses that have been seen as a part of their success.

Quality circles, automation, suggestion systems, Just-In-Time delivery, Kanban and 5S are all included within the kaizen system of running a business. Kaizen involves setting standards and then continually improving those standards. To support the higher standards kaizen also involves

providing the training, materials and supervision that is needed for employees to achieve the higher standards and maintain their ability to meet those standards on an on-going basis. Kaizen is focused on making small improvements on a continuous basis (Imai, 1997). Many scholars in the field believe that there are certain minimal conditions which have to be met for successful implementation of kaizen. This includes conducive political framework, harmonious social relations, compassionate and sympathetic attitude, and capacity to take individual, as well as collective responsibility, and ability to work collectively or high social capital Implementation of kaizen in higher institution needs to be fully committed to boosting the morale of their workers to develop members 'capabilities, to achieve self-actualization, and to work cooperatively. These commitments are vital to the process for improving the quality of the training output. Additionally, Asayehgn (2011) stated that in the journal of —the Transferability of the Japanese Kaizen Management Techniques the transferability of the ideas of kaizen management techniques without contextual understanding of our organization is very difficult, especially in educational institutions because human being doesn't have a spare part which is processed again.

There are several types of kaizen activities, ranging from those that focus on developing solutions to problems on the factory floor, to implementing a predetermined plan for change, to reorganization the flow of paperwork. The most familiar and common type, the factory kaizen, provides a good example of the technique (Imran, 2011). In order to solve problems found in any organization, today's managers often try to apply sophisticated tools and technologies to deal with problems that can be solved with a commonsense, low-cost approach. They need to unlearn the habit of trying ever-more sophisticated technologies to solve everyday problems.

According to GRIPS forum (2009) citation, African manufacturers are not only disadvantaged by the technological gap but also by the lack of knowledge in key managerial methodologies like kaizen. Since kaizen tools are developed in a way to be appreciated by all the workers, and its fundamental methodology is not very complicated. Kaizen is more to do with a philosophy and daily practices rather than techniques. For example, 5S can be taught even to the colleges trainees since the philosophy is sort, set in order, shine, standardize and sustain. thus, the trainees develop their 5s/housekeeping application as a daily activities in the workshop next they will be an owner of the manufacturers and an employees of the manufacturing plants so that the lack of knowledge

gap of kaizen concept understanding in the manufacturing plant may be eliminate through time to time by developing trainees knowledge.

Thus everybody needs improvement so applying the concept of kaizen in day to day activity you can change yourself from rigidity ways of approaches to flexibility. As indicated in the manual of kaizen implementation in AATVET Agency, despite flexibility in its application, kaizen has, among others, common characteristics. It is:

(a) not imposed by —top-down|| orders or instructions, but is a —bottom-up process|| implemented at the initiative of each worker, based on their observations, experiences, knowledge, and so on; (b) not a one-shot activity, but is continuous and incremental; (c) not strictly limited to production itself, but covers all aspects of production including improvements in safety and morale, as well as improvement in quality, in operation efficiency and in delivery of kaizen application in the colleges duration.

2.5 The Relationships between Kaizen Implementation and Reward and Recognition

By making kaizen as standardize ways of life in the organization always considering the worker because they are an actor to implement it and continuing the sustainability of the system. Thus rewarding and recognizing the employees for their accomplishing task is essential.

Organizational culture has several essential components i.e. organizational values, leadership, and the reward and recognition structure of the organization (Knouse, 1996).The reward system reflects the organizational philosophy, democratic and innovative or autocratic and bureaucratic. Promotion and rewards reinforces employee commitment to organizational values and to the organizational culture. Reward and recognition have various functions and can be valuable tool at organizations on their road for total quality management. According to TVET Agency manual of Industry and Technology Transfer (2010), indication recognition is also a form of feedback about the result of individual or team efforts. It shows the individuals or the teams that they are on the right track toward continuous improvement. Recognition as feedback can come from supervisors, other teams, internal customers in the organization, or external customers in the marketplace, Kaizen philosophy processes demand empowered employees, team players and cross functional activities. Reward and recognition can motivate those individuals and groups to continue their active participation in the organization. It will also create a positive environment for various teams to compete against each other and these give a 'win-win' situation between the organization and employees (Yukl, 2010). Generally R&R(Reward and Recognition) has a positive relation between

quality production and employees satisfaction in the organization if it do so properly. To do this activity must be aware of each employee during the preparation of organizational R&R planning system hence they are an implementers. If it is done in an improper way, then R&R may create mistrust between the employees and the organizational leadership and management. This also has its own effect both to the employees and the organization vice-versa. Inconstant to that reward and recognition stimulates additional effort in employees if done consciously.

2.6 Roles of Management and Employees in Implementing Kaizen

When we see bureaucratic application of the management system it has perceptual difference between Western nations and Japan regarding job function. These includes :(1). Western Approach: Importance to systems and procedures are, through systems in that organizational level and functions are established. Here, the focus is on control i.e. functioning within chance cause variation level. In order to take action when assign causes creep in the context.

Changes are mainly through innovations. They are top and middle management responsibilities. This leads to the existence of two types of organizations. (A). Status-quo organization has attempt to improvement or innovation till market condition forces ;(B). Innovation centered organization: is high technology industry. Eventually it disappeared after sometime (Imai, 1986). (2). Japanese Approach focuses on technological and process innovation fall largely in the domain of top and middle management, but improvements are an all pervasive activity from top to bottom with varying degrees according to (Imai,1986) .Management has two major functions in kaizen (i) Create a conducive environment and encourages continuous improvement (technological, managerial and operative) and establishes standards; (ii) maintaining the standards established; as we go from the bottom, the improvement function increases and the top and middle management have a greater role in it. Similarly, as we come down from the top, the supervisors and workers have a greater role in maintenance function. The important role for management in maintenance function is to establish the standards, policies and procedures so that they can be followed by everybody and they could be monitored and reviewed. Management also has the responsibility to educate and train the people to enable them to follow the standards. Thus, in the Japanese perception, one action follows the other in succession (Imai 1986) . Top Management: They work as a establish kaizen as a corporate policy, and (a) to work out strategies for implementation of kaizen management philosophy in the MSEs; (b) to allocate resources, extend, support guidance and provide according to the came author (c) establish clear policies on kaizen and provide cross

functional management goals for achieving kaizen; (d) Evolve systems and procedures and organizational structures for promotion of kaizen (Imai, 1986). Middle Management: (a) Deploying and implementing Kaizen goals directed by top management. Use kaizen in cross functional management activities; (b) Improving (kaizen) in functional capacity; (c.) Maintaining and upgrading existing standards through improvements; (d.) Providing assistance to workers to develop skills and acquire knowledge on problem solving tools. Supervisors: (a.) Follow Kaizen in the functional role (b.) Sustain high morale of workers; keep continuous communication links; assist in kaizen. (c.) Involve in and support SGA like QC circles and also suggestion system. (d.) Provide assistance and involve workers in kaizen activities (Imai, 1986). Workers (a) Through small group activities and suggestion system involve in kaizen (b). Be disciplined to follow standards. Think of kaizen in day to day activities. (c.) Concentrate on self-development continuously and increase capabilities for problem solving.

2.7 The 5s Formwork Place Organization

For proper housekeeping a valuable tool or methodology is used. The term —Five Sll is derived from the first letters of Japanese words referred to five practices leading to a clean and manageable work area: seiri, seiton, seiso, seiketsu and shitsuke. The English words equivalents of the 5S's are sorting, Set in order, Shine, Standardization and sustain (Imai, 1986). Imai (1986) advised that 5S implementation means applying the following activities in the workshop: Sorting, Set in order, Shine, Standardization and sustain. Sorting: - it is a process that involves selecting what you need to complete the job and removing everything else from your work area. It focuses on removing all unnecessary items from the workplace. Thus applying it workplaces will increase and increase financial income by sold the unwanted material. Set in order:-Straightening specifically customizes your workstation and surrounding area to meet your work area needs. Arrange remaining items so they are easy to select, use, and return to their proper location. Hence it helps to use time and material effectively and efficiently in proper ways. It focuses on efficient storage and location methods. In simplest terms —a place for everything and everything in its place|| shine: - Its Emphasis is on the removal of dust, dirt, and grime. It focuses on cleaning up the place now that all the disorder and trash has been removed. Obviously one benefit of this step is to make the workplace cleaner and brighter where everyone will enjoy working. Standardize: - Standardizing creates a work area free of checklists; if appropriate standards are put in place it will be easier to maintain and continue improving. By implementing this we make sure that the first three steps are

maintained. Sustain: - Sustaining is the end result of how well we have performed the previous four S's. In the Sustainment stage, think of ways to eliminate effort in maintaining an area. It is by far the most difficult where you need to make it habit to properly maintain the new processes.

2.8 Policy Deployment

Although kaizen strategy aims at making improvements, its impact may be limited if everybody is engaged in kaizen for kaizen sake without any aim. Management should establish clear targets to guide everyone and make certain to provide leadership for all kaizen activities directed toward achieving the targets. Real kaizen strategy at work requires closely supervised implementation. This process is called Policy Deployment, or in Japanese, Hoshin Kanri cited in (Imai, 1986). 27 First, top management must devise a long term strategy, broken down into medium- term and annual strategies. Top management must have a plan-to- deploy strategy, passing it down through subsequent levels of management until it reaches the organization. As the strategy cascades down to the lower echelons, the plan should include increasingly specific action plans and activities. According to (Imai, 1986), farther explain a policy statement along the lines of —We must reduce our cost by 10 percent to stay competitivell may be translated on the shop floor to such activities as increasing productivity, reducing inventory and rejects, and improving line configurations. Major Kaizen systems without a target would resemble a trip without a destination. Kaizen is most effective when everybody works to achieve a target, and management should set that target (Imai, 1986).

2.9 Kaizen Method

Kaizen methods for work process improvement that include making the improvements originated in the World War II Job Methods training program. It was developed by the Training within Industry (TWI) organization, a component of the U.S. War Manpower Commission during World War II. Kaizen methods that suggest improvements also originated in the work TWI. As suggestion rather than action improvement programs, Imai points out that, "Less well known is the fact that the suggestion system was brought to Japan...by Training within Industry (TWI) (Imai, 1986:112). Huntzinger, (2002) also traces Kaizen back to the Training within Industry (TWI) program. TWI was established to maximize industrial productivity from 1940 through 1945. One of the improvement tools it developed, tested, and disseminated was labeled. It taught supervisors the skill of improving work processes. This program's name was changed to "How to Improve Job Methods" (Production Board, 1945:191) and is most often referred to as Job Methods training. It

taught supervisors how to uncover opportunities for improving work processes and implement improvements. It incorporated a job aid that reminded the person of the improvement process

2.10 Preconditions Necessary to Implement Kaizen Training

The most effective forms of development activity are those connected directly to managers' experiences in the workplace. The belief that 'leaders are born and not made' has finally been eclipsed by the implementation of job experience. The ability to facilitate organizational learning and to lead through ethical/ value-based behavior is identified as priority areas. Continuing professional development (CPD), management development should be seen as a continuous process including the preparation and responsibility of a new job, and subsequent career progression. In recent years greater recognition has been given to the significance of lifelong learning and to continuing professional development (CPD). Regarding CPD as vital to a successful career and requires all members to make a commitment to their own professional development. CPD is linked to gaining the status of chartered manager according to (Mullins, 2010).

Therefore, human capital development are the very important things to evolve and create skilled individuals who live without job to become long last employment. The conception of human capital development underlies most vocational education and training programmes and it consists of at least four different stages or outcomes which are causal and sequential so that if any one of them is missing, the subsequent stages are aborted. The last stage is creating long-run employment and non-employment outcomes. There is a wide range of interrelated individual, group, organizational and environmental influences on behavior in work organizations. If possible it is better to use a developed nation mostly used Excellence model in human professional development. Accordingly there are many different criteria that might be applied in attempting to assess performance and effectiveness. Popular management techniques include benchmarking and gap analysis we are using. Growing attention has been given to measures of performance in the public sector but there is a potential difficulty in measurement of a service ethic. The overall effectiveness of the organization is affected both by sound structural design and by the individuals filling the various positions within the structure (Mullins, 2010).

2.11 Gap Analysis

Gap analysis involves an investigation of the gap between the vision, objectives and goals of the organization and actual levels of performance, and establishing the actions necessary to bring activities in line with that which is planned. For instance the larger quantity of non-financial

measures that most companies track, and the extent to which such measures are aligned with the company's strategies and value drivers. One method for assessing this alignment is gap analysis 'which requires managers to rank performance on at leasting two dimensions: their importance to strategic objectives and the importance currently placed upon them. The importance of a collective understanding and vision of what the organization is capable of achieving, expressed as short-term goals and long-term vision; and to creating superior performance through inspired and committed people. The extent of the gap is the basis for a shared understanding of the gap between current capability and the desired state, the extent of the gap is the basis for a shared understanding of what needs to be achieved, and potentially the energy for the journey (Mullins', 2010).

2.12 Ethiopian Experience of Kaizen

Kaizen was introduced to Ethiopia by Japan International Cooperation Agency (JICA) in 2009 and has since become a mainstay instrument of reform. It has been widely accepted and implemented by many companies. There are concerns over the transferability of *Kaizen* to developing countries, particularly to African countries. Issues raised by those who claim *Kaizen* to be unique to Japan are mostly related to its Japanese religious and cultural background. The differences between the homogenous social fabric of Japan and the diversified ethnicities of Africa are one factor raised as an impediment to *Kaizen* transferability.

The Government of Ethiopia implemented Organizational performance and effectiveness before implementing *Kaizen* called BPR, shortly after the introduction of a nationwide Business Process Re-engineering (BPR). According to Debela (2009), since 1994, the government of Ethiopia has embarked on reforming its civil service organizations with the objective of improving the public sector service delivery system. It was applied in Government bureaus, an idea introduced to bring radical changes among state institutions but, in the process, virtually stalled them for months and now widely deemed to be a failure. The Ethiopian government started advocating the idea of *kaizen*—a Japanese management philosophy—among private and state owned companies; the idea was first brought to the attention of Ethiopia's late PM Meles Zenawi in 2008 (Negussie, 2009). In this instant the government of Ethiopia inspired by the practicality of the *Kaizen* policy and strategy adopt the exemplary approach. In 2008, the Government of Ethiopia as a result requested the Japanese Government to help Ethiopia established the Japanese management technique, known as *kaizen*. Before Industry and Trade (MOIT) reviewed about 63 companies in 2009 that were

located within 100-kms of Addis Ababa to ascertain their quality and productivity status from October 2009 to June 2011. After a preliminary diagnosis of the 63 companies only 30 companies (i.e., 10 from Metal; 6 from Agro processing; 6 from Chemicals; 4 from Leather and; 4 from Textiles) were chosen to serve as pilot projects. Pilot companies from this, ten, five and three companies have been awarded good, best and excellent status respectively by Ethiopian kaizen unit (EKI report document, 2012). The criteria for selecting of those companies are (a) had proximity or outskirts of the city of Addis Ababa (i.e., they were within 100km distance), (b) contributed towards export and /or import, (c) achieved scale of capital, and (d) had qualified employees. After observing the successes of the above implementation 2011, the Ethiopian Kaizen Institute, was established as a full-fledged consulting unit to provide ideas, support and assist in the development and enhancement of the quality and productivity framework for the entire country, (Ethiopian Ministry of Trade, 2011). The institute claimed that the outcome of the work in the enterprises was, value was added by the firms and workers, and the profit margin of the pilot firms who went through the kaizen process increased by 176 percent, 105 percent, and 210 percent respectively, mainly due to labor productivity. The effect of material inputs, machinery, and energy was insignificant as cited (Asayehgn, 2013). These indicate that after implementation of kaizen the process includes center of competency takes place and accreditation expected from the implementers.

2.12.1 Needs of Kaizen in Ethiopia

There are many reasons why kaizen was developed in Japan transformation in the East Asia and Africa including Ethiopia recently. One reason is that, After the Second World War Japanese private associations played a very important role in disseminating quality and productivity improvement (Kaizen) technology (including techniques and skills) widely to Japanese industrial sector according to Ethiopian Kaizen Institution (2013). The contribution of the manufacturing sector to Gross Domestic Product (GDP) is even smaller in Ethiopia. Hence, the country GDP shows that in 2006/2007 just 5.1% in comparison to 46.3% from the agricultural sector and 40.3% from the service sector respectively. Compared to Kenya, the presence of multinational companies is very small in Ethiopia. At the same time however, some talented local entrepreneurs have enjoyed the benefits of access to a market consisting of nearly 80 million people. Due to the absence of major multinational companies, Ethiopia is yet to absorb the knowledge of kaizen (Ishiwata, 2009). One characteristic of the Ethiopian manufacturing industry is the dominance of

public enterprises. 44% of value addition from the manufacturing sector was produced by 154 public enterprises in 2006/7. The Government of Ethiopia is committed to modernization and productivity improvement in its public enterprises. The Privatization and Public Enterprise Supervising Agency (PPESA), a section under the Ministry of Trade and Industry, is responsible for implementing Business Process Reengineering (BPR) among public manufacturers (Ibid). The private sector in Ethiopia is also aware of the need for productivity and quality improvements, and the leading manufacture share adopted TQM. Yet, they have not established a visual monitoring system, which enables real-time production and quality control. Furthermore, adoption of 5S is hardly observable. Introduction of kaizen shall strengthen TQM already initiated in those manufacturers.

2.12.2 Stakeholders Participation in Implementing Kaizen Strategy

According to EKI, (2013) stakeholders which implement Kaizen in our country working together with the governmental organization Ethiopian Kaizen Institute (EKI), Japan International Cooperation Agency (JICA) in addition to this it includes, Ministry of Industry (MoI), Ministry of Urban Development and Construction (MoUDC), Ministry of Education (MoE), Federal Micro and Small Enterprise Development Agency (FeMSEDA), Regional Micro and Small Enterprise Development Agencies (ReMSEDA), Federal TVET Agency (FeTA), Regional TVET Agencies (ReTAs), Technical TVET Agencies (ReTAs), Technical Vocational Education and Training Institute (TVETI). Therefore, Kaizen implementation surrounded by the above stakeholders one way or another they are responsible and they have power over policy making, implementation of kaizen, supervision, observed the sustainability the implementation. All stakeholders hold a support policy plan for SMEs, with the intention of achieving their targets. Accordingly, the stakeholders taking parts in the proper implementation of government policy here in our country are more responsible for providing TVET since they have entire professional personnel (Kaizen trainers), that can support SMEs. They are also available and closer to identify their skill gap for the purpose of fill their gap by trained according to market and industry demand. From the above general policy, programme and strategy currently, more emphasis are put in improving their competitiveness in private and Government organization. Due to this fact, Ethiopia is proclaiming the Japanese kaizen policy. Number of other public and private enterprises try to implement kaizen training policy (meaning change for better or continuous improvement involving everyone in the micro and small enterprise) the benefits of which goes to both the client and for SMEs

2.12.3 Work Area Characteristics

Research by Glover (2010) identified and measured six perceptual Work Area Characteristics: knowledge of continuous improvement, external perspective, experimentation, internal collaboration, group stewardship, and work area routineness. Three proposed objective work area characteristics were also measured: management Kaizen event participation, workforce changes (including work area employee and management turnover), and production system changes (including changes to work area equipment, product volume and product mix). These factors relate to organizational characteristics that have been found to impact the institutionalization of change. Work area routineness measures the general complexity of the target system, based on the level of stability of the product mix and degree of routineness of product flow (Farris, 2006). Although not explicitly mentioned in the Kaizen event and general process and continuous improvement sustainability literature, one can infer that the complexity of a work area may impact the complexity and scope of an improvement effort; increased levels of project scope and project complexity may negatively impact sustainability of improvement (Keating, 1999).

2.12.4 Post-Event Characteristics

The present research identified and measured three Post-Event Characteristics: institutionalizing change, improvement culture, and performance review. The factors relate to the processes that have been found to impact change sustainability. Specifically, the individual factor items within these three measures refer to the socialization of the change (socialization), commitment of the individual to the change (commitment), the allocation of rewards based on the pursuit of behaviors that support the change (reward allocation), and processes used to measure the degree of institutionalization, feedback information, and corrective actions (sensing and recalibration)

Improvement culture is defined in the research by Glover (2010) as the encouragement of organizational improvement through management's support of the use of Kaizen events and continuous improvement activities among work area employees and Kaizen event team members. The existence of such efforts can be observed through management's support of work area employees and Kaizen event team members. For instance, Bateman and Rich (2003) identified a lack of management support as an inhibitor of Kaizen event sustainability.

Chapter three

Methodology

3.1 Research Method

The method of the research study emerges out of the nature of the problem and the purpose of the study (Kothari, 2001). The very focus of this study is to make a detailed investigation of factors affecting the sustainability of Kaizen event in Agena construction and industrial College. It is a complete phenomenon that is affected by different factors. As a result the study was focused on basic factors that affect to sustain kaizen event.

To achieve the purpose of the research, descriptive research design method was employed because descriptive research helps to describe state of affair as it exist at present and report what happened or what is happening and finally discover the cause.

In order to get the intended objectives of the study, both qualitative and quantitative research approaches was used because using one of the approaches independently in the study does not bring the intended results of the research. The quantitative method was used to show the practical application of kaizen implementation/practice, successes, and challenge to sustain. The researcher was used qualitative information from the participants for in-depth understanding of the state of affair.

3.2. Sources of Data

Overall, this research was used both primary and secondary data through questionnaires and gathering data with interview.

3.2.1. Primary Sources of Data

Primary data were collected from trainers, department heads, shop assistances and core and supportive staff who are working in Agena construction and industrial college. Structured survey questionnaire and interview was used to obtain information from selected samples.

3.2.2. Secondary Sources of Data

Secondary sources were gathered from reports, minutes and documents of kaizen to enhance the data obtained from primary source

3.2.3 SAMPLE SIZE DETERMINATION

To get representative data the researcher used solving formula cited by Yemane (1967) considering the level of acceptable margins of error 5%. Regarding this Kothari (2004) suggests that an optimum sample is one which fulfills the requirements of representatives and reliability. Hence, from the target population trainers and administrator staff members (N=104) a total number of 86 samples are required drawn assuming 95% of confidence level and 5% margin of error. Based on this the researcher decided to take the upper population size limit to get more valid sample size.

Therefore, the sample size of this study was 86 considered fairly representative of the target population in the study area and 56 data was collected through Questionaries' and 30 administrative staff were obtained information by interview and 11 participants will selected purposely ,, totally in the study area 86 respondents was addressed. To compute the sample proportion of each sector, the obtained sample divided by population.

The sample units that are considered under the study describe will active lists of college deans, administrative staff employees and Trainers.

Table 1 sample size determination

No.	Respondent	Total in the college	Sample		method of data collection
			No.	%	
1	Trainer's	51	45	88.2	Questionaries'
2	Department heads	6	6	100	Questionaries'
3	Shop assistances	2	2	100	Questionaries'
4	Deans	3	3	100	Mixed
5	Administrative staff	42	30	71.4.5	Interview

3.2.4 Data Collecting Instruments

The study was employed both qualitative and quantitative research approach to challenges affecting the practice of kaizen and sustainability in Agena construction and industrial College. Therefore, the researcher was used questionnaire to collect quantitative data and, interview to collect qualitative data. Direct personal observations involved during visiting of kaizen events of the College as a means of gathering data by watching, and recording the 5S implementation conditions. Since Administrative staff was few in number in comparison to academic staff;

gathering and analyzing qualitative data made simple therefore interviewing was done. However, the questionnaire was used to collect data from trainers, department heads, administrative staff and shop assistances. The data were collected.

3.2.4.1 Questionnaire

Questionnaire is preferential research instrument because it enables the researcher to secure data from the sample respondents at a time and for its natural characteristics that allow them to express their ideas and opinions freely

3.2.4.2 Interview

Semi-structured interview was conducted by using list of specific questions to deans and some administrative staff.

3.2.4.3 Observation

Observation was conducted by the researcher to gather data to check whether activities such as kaizen event characteristics, work area situation, practices, social and technical exercise were taken by observation.

3. Method of data analysis

The quantitative data were analyzed through descriptive statistics with SPSS Version 20 and presented by graphs, table and figures. While, the qualitative responses from semi-structured interviews with key informants, observations and documentary analyses were transcribed verbally and analyzed using thematic analysis techniques respectively. Afterwards, the qualitative findings were presented theme by theme in order to triangulate the findings of the quantitative aspect of the study. Finally, these thematic findings were integrated into those of the quantitative ones while writing-up the thesis.

3.1 Response Rate

In order to make the collected data suitable for the analysis, all questionnaires were screened to be complete. All returned incomplete questionnaires are considered as errors and removed from the survey data. Out of 56 distribute questionnaires 56(100%) response rates will be obtained. On the other hand, Out of 30 distribute interview 30(93.3%) response rates will be obtained.

From the total of 86 respondents 86 respondents were returned the questionnaires and properly interviewed there total rate of response from 86 is 86(100%).

Table 2sample return rate

No.	Respondent type	Total dispatched question	Returned number		Return rate based on respondent interest
			No.	%	
1	Trainer's	45	45	100	Very good
2	Department heads	6	6	100	Very good
3	Shop assistances	2	2	100	Very good
4	Deans	3	3	100	Very good
5	Administrative staff	30	30	100	Interview

Chapter Four

4 Presentations, Analysis and Interpretation of Data

This chapter deals with the presentation, analysis and interpretation of the data collected through questionnaire, interview and observation. In order to get the relevant information about the practice and challenges for implementing and sustaining of kaizen, the data were gathered from trainers, department heads, shop assistances, core and supportive administrators of Agena construction and industrial college.

The quantitative and qualitative data were collected and analyzed using descriptive statistics and thematic analysis techniques, respectively. This chapter presents data from quantitative, qualitative and observation. The first section is on demographic characteristics of the respondents. Section two is data analysis and interpretation.

4.1. Demographic Characteristics of the Respondents

Table 3. Demographic Characteristics of the Respondents Background

No.	Item		Trainers, dep. heads and shopassistances, administrative staff	
			No.	%
1	Sex	Male	63	80.76
		Female	15	19.23
2	Service years	1-5	37	47.43
		6-10	26	33.33
		11-15	12	15.38
		16 and above	3	3.84

The above table the demographic characteristics of the respondents. As shown in the table total of 63(80.76%) of the respondents were males and 15(19.23%) were females. The majority of the respondents were males. Although, efforts were made to encourage female workers by the government, the data shows less contribution of female workers especially from the trainer the proportion of male and female trainer was unbalanced due to these reason there is less participation of females; and it has its own impact to enhance the existing low level of technology by

manufacturing related sectors, which involves much more physical work. This implies possible means need to be sought and put in place for better technology utilization by participating females.

On the other hand, more than half of the respondents, 37 (47.43%) were found to have low level of service years (1 – 5 years), while the remaining, 26 (33.33%) had 6 to 10 years of service thirdly 12 (15.38%) had 11-15 service year, and lastly 3 (3.84%) have an experience of 16 and above. Thus, the majority of the employee who have implementing and sustaining the kaizen strategy was less-experienced. It is advisable to provided senior leadership support for the team of kaizen to knowing the challenges and practice of kaizen to implement a sustainable.

4.2 Respondents rating on challenge of kaizen sustainability

Table 4. Respondents rating of challenge of kaizen sustainable implementation

No.	Item on kaizen sustainability	Strongly disagree		disagree	Neutral	Agree	Strongly agree	Mean	Standard deviation
		N	%						
1.	There is clear goal to sustain kaizen in the College	N	8	24	16	2	0	2.24	.771
		%	16.0	48.0	32.0	4.0	0		
2.	Task complexity negatively affect implementation and practice in the College	N	13,	15	18	2	2	2.30	1.035
		%	26	30	36	4	4		
3.	There is diversity of functional expertise within the Kaizen event team	N	14	21	10	1	4	2.20	1.125
		%	28	42	20	2	8		
4.	There is support that senior leadership provided to the team, including materials and supplies, equipment, and assistance from organizational members.	N	18	23	7	1	1	1.88	.872
		%	36	46	14	2	2		
5.	Trainers understand what continuous improvement (kaizen) is.	N	5	10	15	11	9	3.18	1.240
		%	10	2	3	22	18		
6.	Trainers understand how continuous improvement can be applied to	N	8	17	12	11	2	2.64	1.120
		%	16	34	24	22	4		

NOTE: N is frequency of respondents, %= percent of respondents from each scale,

From the above table number one the average mean value from respondents view point on the case of clear goal to sustain kaizen in the college have 2.24. This indicates that there is below in three closer to 2 which are disagree, by most of the respondents. In addition to academic staff the administrative staff were not clear know the goal of kaizen in the college. From the second item

Task complexity negatively affect implementation of continuous improvement of kaizen have a mean value of 2.30. In this regard the concerned bodies need to solve the problem of complexity.

Item 3 table one whether or not there is diversity of functional expertise within the Kaizen event team have a mean value of 2.20. This implies majority of the Kaizen event team had less team functional heterogeneity to sustain Kaizen; mostly they focus on trainers not considering the administrative teams. Regarding with item four majorities of respondents strongly disagreed and disagreed with a question about support that senior leadership provided to the team, including materials and supplies, equipment, and assistance from organizational members to sustain Kaizen implementation have a mean value of 1.88. Therefore, they were few support that senior leadership provided to the team, including materials and supplies, equipment, and assistance from organizational members. So, there is a need of senior leadership to give attention to provide support to the team, including material and supplies. From the above table item number 5 Trainers understand what continuous improvement (kaizen) has a mean value of 3.18 is above undecided. Therefore most trainers have able to know these ideas but in terms of administrative staff rare number of respondents know.

From the last item the factor affecting or challenging kaizen sustainability on the case Trainers understand how continuous improvement can be applied to have mean value of 2.64, in this point most trainers knowing what continuous improvement mean but the application on ground is very complicated because the mechanisms and the way how they are going to functional it is unclear in practical. In terms of administrative staff members the point of view about kaizen is rare they considering that it is the only responsibility of trainer's rather supportive staffs.

Moreover, the respondent were ask during interview whether or not they have knowledge of kaizen and whether or not kaizen implementation important for the College. They replied they had less sufficient knowledge of kaizen through on job training facilitated by the college. Moreover, they gave their opinion on the benefit of kaizen to the College. Some replied kaizen implementation brought different benefits for instance work area become comfortable for workers and work and reduce wastage of time and resource. The interviewee asked if there is affecting factor to sustain kaizen implementation in their College. The respondents replied, there are several factors that affect sustainability of kaizen. Among these less commitment of employee and trainers, poor

follow up and evaluation mechanism on the side of management were some of major gaps seen in the College.

4.3 Work area characters of sustainable implementation of kaizen

Table 5 Work area characters of sustainable implementation of kaizen

No.	Item on kaizen sustainability	Strongly disagree	disagree	Neutral	Agree	Strongly agree	Mean	Standard deviation
1.	There is communication across work areas (departments) to support continued improvement after a Kaizen event.	N	18	22	9	1	1.86	.783
		%	36	44	18	2		
2.	Work area trainers are able to share experiences and lessons learned with peers.	N	3	20	23	4	2.56	.733
		%	6	40	46	8		
3.	Trainers try out new things by applying them in practice (Active experimentation with new ideas)	N	12	21	15	2	2.14	.833
		%	24	42	30	4		
4.	There is collective responsibility of a group of work area among trainers.	N	6	15	1	19	3.92	1.046
		%	12	30	34	20		
5.	There is Work area trainers and management turnover.	N	3	4	13	15	4.20	1.087
		%	6	30	26	30		
6.	Management actively participates in kaizen event.	N	24	16	9	1	1.74	.828
		%	48	32	18	2		

From the above table item number one College respondents expressed that the level of communication across work areas (departments) to support continued improvement after a Kaizen event did attract them have a mean value of 1.86. Thus, this implies that there was significant problem of communication to sustain kaizen in the College. So, the College can unable to sustain kaizen. In terms of item two Work area trainers are able to share experiences and lessons learned

with peers have a mean value of 2.56. Is closer to three indicates 50/50 ratio in terms of idea sharing by trainer.

As shown in the above table, Item 3, 33 (66%) of the respondents disagreed and strongly disagreed towards trainers active experimentation with new ideas. This indicates that the college had only few trainer's active experimentation with new ideas to develop knowledge and learning of trainer's. Active experimentation with new ideas (Upton, 1996) has been found to be a key component of learning and knowledge development which may influence improvement outcome sustainability. Thus, trainees and employee of the College expected to generate continuously new idea to attain continuous improvement.

Item number 4 from above table the majority of the respondents thought that there was collective responsibility of a group of work area among trainers. This implies that more of the trainers possess Collective responsibility. Therefore the College can use this as an opportunity to sustain kaizen implementation.

In above table Item 5 illustrated the responses of the respondents whether there was Work area trainers and management turnover. The majority of respondents disagreed and strongly disagreed to the statement. The finding indicated that more than half of the respondents assumed the College had no trainers and management turnover. So, the sustainability not drastically affected by this factor.

From the last item in above table Management actively participates in kaizen event have a mean value of 1.74 in this regard 80 percent of respondents were disagree , 18% were undecided and last 2% were agree. This indicates that there was lack of active participation of management in kaizen. As a result there is a require of management to actively participate in the whole task of kaizen by showing a role model contribution.

4.4 Post event characters of sustainable kaizen implementation

Table 6 Post event characters sustainable kaizen implementation

No.	Item on kaizen sustainability	Strongly disagree	disagree	Neutral	Agree	Strongly agree	Mean	Standard deviation
1.	To institutionalizing change every member of the organization completing the Plan-Do-Check-Act cycle.	N	6	26	11	4	2.44	1.013
		%	12	52	22	8		
2.	Managements support of work area employees and Kaizen event team (QCC) members include Rewarding and recognition of employees	N	27	16	5	2	1.64	.827
		%	54	32	10	4		
3.	Management blame or negativity when team goals are not achieved.	N	26	11	2	11	1.96	1.212
		%	52	22	4	22		
4.	There is progress or follow-up and Meetings with Kaizen coordinator or facilitator	N	42	7	1	0	1.20	.535
		%	84	14	2	0		
5.	Conducting regular audits on changes made kaizen implementation by kaizen coordinator.	N	37	11	2	0	1.30	.544
		%	74	22	4	0		
6.	There is meetings with management about kaizen	N	11	13	24	2	2.34	.872
		%	22	26	48	4		
7.	Employee freely shares information with one another.	N	20	12	8	5	2.26	1.352
		%	40	24	16	10		

From table above shown to institutionalizing change every member of the organization completing the Plan-Do-Check-Act cycle have a mean value of 2.44. According to literature this implies that

this factor includes the Kaizen event sustainability research of Bateman (2005). Her research found that completing the Plan-Do-Check-Act cycle in closing out action items, including the formal recording of ideas and the formal introduction of new work methods, was a general enabler for process improvement sustainability. However, every member of the organization not completing the Plan-Do-Check-Act cycles, this implies that in this area there was one factor affecting sustainability of kaizen in the College. There for applying the Plan-Do-Check-Act cycles regularly important for sustainability of kaizen.

The response rate of respondents from item number 2 whether the managements support of work area employees and Kaizen event team members include rewarding and recognition of employees; almost half of them accepted the shortage of managements support, include rewarding and recognition of employees in the College have a mean value of 1.64. Hence Bateman and Rich (2003) identified a lack of management support as an inhibitor of Kaizen event implementation in a sustainability way. Reward and recognition can motivate those individuals and groups to continue their active participation in the organization. It will also create a positive environment for various teams to compete against each other and these give a 'win-win' situation between the organization and employees (Yukl, 2010). This implies that the lack of management's support, include rewarding and recognition of employees was one of the challenges of sustainability of kaizen in the College. Therefore, the College should think of the way to support employee and prepare itself for appropriate rewarding and recognizing system.

From the table Item 3 Management blame or negativity when team goals are not achieved have a mean value of 1.96. This part was not serious factor affect sustainability of kaizen in the college. But, the College should consider response of respondents who says there was blame or negatively when team goals are not achieved to not create even few gaps for the sustainability of kaizen.

The perception of respondents level of agreement towards progress or follow-up and meetings with Kaizen coordinator or facilitator to sustain kaizen implementation indicates that, 98% were strongly disagreed and disagreed. This shows that, there were lack of follow-up and meetings with Kaizen coordinator or facilitator in the College. So, there is an assignment here for the College to raise contact with Kaizen coordinators. And adjust regular follow-up for each.

Regarding conducting regular audits on changes made kaizen implementation by kaizen coordinator. As the empirical finding indicates with mean value Of 1.30 of respondents accepts

that there is scarcity of regular audit on kaizen implementation. Therefore, from the evidence more emphasis gave to greater percent. This indicates there was lack of regular auditing in the College. Thus, to sustain kaizen conducting regular audit and providing feedback are vital.

Regarding with items related to There is meetings with management about kaizen have an average of 48% of respondents were disagree. In this regard the manager of the college has a meeting with academic commission members but not with trainer as well as other bodies.

Lastly, 2.26 mean value of the respondents were rated strongly agreed and agreed on employee freely shares information with one another, this indicates that, employee freely sharing of information with one another was not factor affecting sustainability of kaizen implementation.

The researcher interviewed respondents regarding whether employee show sense of accountability for the work they do in sustaining kaizen. More than half the respondent replied there is lack of sense of accountability. The reason they forward is there was no as such regular plan- do- check activity, evaluation and feedback system so that, they develop negligence on kaizen activities. Whereas few respondent reply there was sense of accountability on few employee. However, this not brought change to the Colleges on sustaining kaizen activities. More of respondent's replies there was luck of a regular audit, rewarding and recognizing system in the College.

Even if, kaizen Implementation have success history, kaizen not become ongoing activity of the College. The main challenges were lack of awareness and less sense of responsibility, lack of college management support, lack of team work culture, lack commitment were some of affecting factors faced to sustain kaizen. The other respondent replied shortage of training on attitudinal change, less participation of management body, lack of well trained staff, and lack of applying techniques of sustainable implementation of Kaizen College.

The other respondent replied, challenges of sustainability of kaizen implementation arises from inappropriateness of building, thought kaizen as simple only shining activity, work load of employee (employee made the busy in transitory work), expecting fast change and financial challenges.

From the interview the interviewee points of benefits of kaizen implementation were better space utilization, improved working system, increased employee's motivation by attraction, increase customer satisfaction while cleaning the compound.

The researcher observes from the minutes of department availability of sharing experiences and lessons learned with peers but there was lack of active experimentation with new ideas, meetings with management and active participation of management about kaizen. Lack of Proper resource utilization , college buildings are not shine, waste concentration in compound, compounds design not safe for trainee, standardize is not taken as a culture, unwanted items in the compound did not removed and this affects the attraction of college by stakeholders, no clear goal of kaizen in the college, shop layout by 8 station is differ from department to department. The compound is not safer for trainee, (example toilet, and lack of water), no customer and trainee resting place in compound, lack of light in and around the compound for guardian and night student, the administrative staff and new employee trainer should not be take a training about kaizen this causes hardly to implement kaizen in a sustainable manner.

Suggested Solutions to Mitigate the Problem Listed Above address the challenge of sustainable implementation of kaizen were

- (1) Arrange short term training program to trainers and employees.
- (2) Organize the kaizen office providing sufficient human, material and financial resource.
- (3) Plan and create awareness on active participation and work area commitment of management, trainers, and administrative staff and in the kaizen activity.
- (4) Develop regular auditing, recognizing, awarding mechanism to those employee generate new ideas and who possesses well performance,
- (5) Develop mechanism of follow up, setting regular meeting program with management and develop methods for continuous implementation of kaizen.

Chapter Five 5.

Summary, Conclusion and Recommendation

5.1 Conclusions

This study assesses the challenge of sustainable implementation of kaizen in Agena construction and industrial college. Kaizen as a continuous improvement, were implemented in the workshop of the colleges. To investigate this, quantitative and qualitative research approach was employed. Lastly, based on the findings discussed above the following conclusions have been drawn.

- ❖ The finding indicates the challenge of sustainable implementation of kaizen in the College, few support that senior leadership provided to the team, including materials and supplies, equipment, and assistance from organizational members, management body in the activity to sustain kaizen in the College is little, This implies majority of the Kaizen event team had less team functional heterogeneity to sustain Kaizen; mostly they focus on trainers not considering the administrative teams.
- ❖ Lack of Proper resource utilization, college buildings are not shine, waste concentration in compound, compounds design not safe for trainee, standardize is not taken as a culture, unwanted items in the compound did not removed and this affects the attraction of college by stakeholders, no clear goal of kaizen in the college, shop layout by 8 station is differ from department to department. The compound is not safer for trainee, (example toilet, and lack of water), no customer and trainee resting place in compound, lack of light in and around the compound for guardian and night student, low kaizen implementation performance in the college departments, the administrative staff and new employee trainer should not be take a training about kaizen this causes hardly to implement kaizen in a sustainable manner.

The majority of respondents replies completing the Plan-Do-Check Act cycle, managements support of work area employees and Kaizen event team members include rewarding and recognition of employees, follow-up and meetings with management, conducting regular audits on changes made kaizen implementation and meetings with management about kaizen, luck of provision of appropriate resource on time were other challenge for sustainable implementation of kaizen in Agena construction and industrial college. So, to successfully plan and organize college's

kaizen implementation and sustainability activities the management should possess, applying PDCA cycle, active participation on Kaizen activity ,regular meeting with the whole workers of the college, develop regular audit and evaluation system with it feedback ,establishing durable rewarding and recognizing system, facilitating the necessary resource are vital.

- ❖ The study showed that the major functions that Kaizen coordinators and main kaizen team were not performed well. From the PDAC cycle up to monitoring and evaluation of the kaizen activity, giving feedback and facilitating rewarding and recognition system were disappointing.
- ❖ The outcome of the research shows that trainer's belief in value need of change, commitment and generating new idea (active experimentation) to sustain kaizen very low. Trainers have many roles to play in the college. One major role is training; additionally they participating in college's management activities participate in the supervision during the companies training, preparing modules for short term training for SME s, implement kaizen in the workshop and in the SME too. Moreover, the research finding indicates there were task complexities. Thus, the College needs to give an emphasis to short term training and hold successive awareness program to change their beliefs, commitment and idea generating experience.
- ❖ The research also point out the existence of some factors necessary for sustainability of kaizen implementation, such as diversity of functional heterogeneity, sharing experience, collective responsibility on work area, Trainers understand what continuous improvement, few turnover of management were some of the good opportunities to be used in future sustainability kaizen implementation in the College.

5.2 Recommendations

Based on those findings of the research and conclusions drawn from them, the researcher suggests the following possible recommendations for action to be undertaken by each stakeholder at different levels to improve sustainability of kaizen implementation in the College.

5.2.1 Recommendation for College deans/vice deans.

According to Imai (1986), kaizen management philosophies and practices consist of three pillars of kaizen that are: housekeeping/5s, waste elimination and standardization. As he stated, the management and employees must work together to fulfill the requirements for each category.

- All the deans' actively participate in kaizen practices. It is necessary to take the leading by involving as role model
- Deans especially concerned vice deans facilitate regular Meetings with trainers and administrative staff members to sustaining kaizen activity
- Top management of work area employees and Kaizen event team members by providing reasonable resource and gracious idea.
- Management set constant rewarding and recognition system of employees. As shown in the findings, the absence of reward and recognition to kaizen implementers was mention as one of the constraints to make kaizen sustainable. To alleviate this problems, the colleges management have to practices different types of reward and recognition strategies to motivate the employees through providing certificates, monetary reward and promotion through carrier structure; appreciating the work of employee through Poster on kaizen board, intensifying in workshops, using leaflets .
- The gate way of the college name must have readable signs by customers and have well designed website, PO Box, Gmail address.

5.2.2 For material management department

- Proper utilization of resource is best practice for kaizen implementation in a sustainable manner. Therefore the material management department should be remove unwanted resource in the college compound or repair and reuse some resource .
- The compound should be attractive for other stakeholders by redesigning resting place for customer, mowing of grass and other shrubs to be clear, painting of college buildings, tagging the materials or equipment's and other office machines, and other kaizen.

5.2.3 For the main kaizen team / focal person/institutional capacity building vice dean of the College

- Essential to arrange compulsory programs to create continuous awareness program to change the attitude and to develop employee sense of commitment and responsibility
- Necessary to conducting regular audits on changes made kaizen implementation by kaizen coordinators .Kaizen implementers should be assessed objectively by the skilled supervisors, sustainable monitoring and evaluation and feedback system, the communication system should be improved.

- To institutionalizing change every member of the organization completing the Plan-Do-Check-Act cycle.
- The study shows that to make kaizen system sustainable in the higher learning institutions, it is essential to give some sort of responsibility to seniors leadership to provide support for the team, including materials and supplies, equipment, and assistance to organizational members. Every trainers, administrative staff, top management should facilitate experience share senior leader and juniors.
- Awareness creation for administrator staff member is mandatory to sustain kaizen implementation in the college, so institutional capacity building well prepare and giving training for administrator staff as well as junior trainers.
- Follow up programs are essential to know the level of performance of the kaizen activity Therefore, Scheduled follow up program by kaizen facilitators helps to evaluate the sustaining program.

5.2.4 For department heads and trainers

- Experience sharing with in each about kaizen should be taken as a culture.
- Tagging each equipment's while the used it and easily accessible and identifiable to trainee
- The trainer should not be expected from top management order rather they must be practice any kaizen implementation and its sustainability.
- They must be taken strategies of 5s as a daily activity and adopt best training resource utilization mechanisms (perishable raw material, tools and other equipment's)

Reference

- Asayehgn Desta (2011).The Transferability of the Japanese Kaizen Management Techniques: Lessons for Ethiopia. Dominican University of California & Associate Editor of the British Journal of Management and Economic
- Bateman, N. and Rich, N. (2003), —Companies' Perceptions of Inhibitors and Enablers for Process Improvement Activities, International Journal of Operations and Production Management, Vol. 23 No. 2, pp. 185–199
- Berk, J & Berk, S (1993). —Total quality management: Implementing continuous Improvement. “New York: Sterling Publishing.
- Bhuiyan, N. Baghel, A. 2005. An overview of continuous improvement: from the past to the present. Management Decision Vol. 43 No. 5, 2005. Emerald Group Publishing Limited 0025-1747, DOI 10.1108/00251740510597761. Accessed 26.10.2016.
- Bowles, J. & Hammond, J, (1991) “ Beyond quality how 50 wining companies use continuous improvement _ ‘ ,New York: Putnam
- Burch, M.K. (2008), —Lean Longevity Kaizen Events and Determinants of Sustainable Improvement, Doctoral Dissertation, University of Massachusetts, Amherst, MA.
- Burton, T. 2015. A History of Lean and Continuous Improvement. The Center for Excellence in Operations, Inc. Accessed 26.10.2016.
- Debela, T. (2009). Business process re-engineering in Ethiopian public organizations: The relationship between theory and practice. Journal of Business and Administrative Studies, Vol. 1, No. 2.
- EKI, (2010). Pamphlet on Kaizen implementation in Addis Ababa Company and industries Ethiopian Kaizen Institute (2012:36&39)
- Farris, J.A. (2006), —An Empirical Investigation Of Kaizen Event Effectiveness Outcomes and Critical Success Factors, Doctoral Dissertation, Virginia Polytechnic Institute and State University, Blacksburg, VA.
- Foss, I (2004). Development of Trade in Africa: Promoting Export through Quality and Product Safety. NORAD/SIDA
- Glover, W.J. (2009),—Evaluating the Psychometric Properties of Survey Measures for Kaizen Event Post-Event Factors, Proceedings of the 2009 American Society for Engineering Management Conference, Springfield, MO, October 14-17, 2009, CD-ROM.
- Henry, J., Mayle, D.2002. Managing Innovation and Change. Milton Keynes, U.K., Open University Business School.
- Hunter, J. 2012.Speech by Dr. Deming to Japanese Business Leaders in 1950.The W. Edwards Deming Institute. Accessed 23.8.2016.

- Imran Ahmad Khan et al (May, 2011). KAIZEN: The Japanese Strategy for Continuous Improvement. VSRD International Journal of Business & Management Research. VSRD- IJBM
- Keating, E.K., Oliva, R., Repenning, N., Rockart, S., and Sterman, J. (1999), —Overcoming the Improvement Paradox, European Management Journal, Vol. 17 No. 2, pp. 120-134.
- Kilian, C.S (1992). —The world of W .Edwards Deming(2nd ed). Knoxville, TN:SPC
- Kothari, C.R (2004).Research Methodology: Methods and Techniques (2nd ed).New Delhi: Wishwa Prakashan
- Mullins, (2010). Management and organizational behavior. Ninth Edition Portsmouth UK: Laurie J. Mullins. Published by Rotolito Lombada, Italy
- Readman, J., and Bessant, J. (2007), —What Challenges Lie Ahead for Improvement Programme in the UK? Lessons from the CINet Continuous Improvement Survey 2003, International Journal of Technology Management, Vol. 37 No. 3/4, pp. 290-305.
- Upton, D. (1996), —: Mechanisms for Building and Sustaining Operations Improvement, European Management Journal, Vol. 1 No. 3, pp. 215-28.

Appendix

AGENA CONSTRUCTION AND INDUSTRIAL COLLEGE

(Questionnaire to be filled by Trainers)

This questionnaire is prepared to collect data. The study attempts to explore the major problems encountered by practice of kaizen in Agena construction and industrial college. The study also hope to come up with some solution to overcome the existing problems. In order to collect necessary information for the study your participation is very crucial. Thus, you are kindly requested to complete the questionnaire carefully and honestly. Please by assured that your responses will be kept confidential. You are not thus required write your name.

Please, follow the instruction provided for each part and indicate your level of agreement by marking 'X' in the appropriate table below. Give precise and short responses to open ended questions next to tables.

I am very much grateful to you for taking time and filling out this questionnaire!

Part –I

General background

1. Name of department _____
2. Sex A/ Male B/ Female
3. Age 18-22 23-27 28-32 33-37 Above 37
4. The field you are teaching now _____
5. Qualification _____
6. You work experience in teaching _____ years

Part two

By using scale of 1-5, indicate your response by marking “X” in the appropriate column of the table below.

Key: 1= strongly disagree (SD), 2= disagree(D), 3= Neutral(N), 4= Agree(A), 5= Strongly agree(SA).

For example, if your answer is “strongly disagree”, you have to write X under column of 1 like this:

Response				
1	2	3	4	5
X				

I. Issues related with what are the challenges that affect the implementation of Kaizen in Agena construction and industrial College?

No	Items					
		SD	D	N	A	SA
		1	2	3	4	5
1	There is clear goal to sustain kaizen in the College					
2	Task complexity negatively affect implementation and practice in the College					
3	There is diversity of functional expertise within the Kaizen event team					
4	There is support that senior leadership provided to the team, including materials and supplies, equipment, and assistance from organizational members.					
5	Trainers understand what continuous improvement (kaizen) is.					
6	Trainers understand how continuous improvement can be applied to					

II. Issues related with what work area characteristics do affect the sustainability of Kaizen event outcomes in Agena construction and industrial College?

No	Items					
		SD	D	N	A	SA

		1	2	3	4	5
7	There is communication across work areas (departments) to support continued improvement after a Kaizen event.					
8	Work area trainers are able to share experiences and lessons learned with peers.					
9	Trainers try out new things by applying them in practice (Active experimentation with new ideas)					
10	There is collective responsibility of a group of work area among trainers.					
11	There is Work area trainers and management turnover.					
12	Management actively participates in kaizen event.					

III. Issues related with what are the post characteristics of kaizen implementation practice?

No	Items					
		SD	D	N	A	SA
		1	2	3	4	5
13	To institutionalizing change every member of the organization completing the Plan-Do-Check-Act cycle.					
14	Managements support of work area employees and Kaizen event team (QCC) members include Rewarding and recognition of employees					
15	Management blame or negativity when team goals are not achieved.					
16	There is progress or follow-up and Meetings with Kaizen coordinator or facilitator.					
17	Conducting regular audits on changes made kaizen implementation by kaizen coordinator.					
18	There is meetings with management about kaizen					
19	Employee freely shares information with one another.					