

The Way of Kaizen: Implementation of Kaizen Philosophy in Quality Assurance in Bangladeshi Higher Education

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ABSTRACT

Quality assurance in higher education is a pressing global concern, with particular challenges in implementation and maintenance evident in developing nations like Bangladesh. This study addresses the multifaceted challenges facing higher education in Bangladesh, including financial, political, cultural, bureaucratic, and governmental obstacles. Through a focused examination, this research proposes a methodology for continuously developing higher educational institutions, emphasizing the trouble-free sustainability of changes. By shifting from current inefficient policies to a task-oriented approach rooted in the kaizen philosophy, this study aims to enhance the outcomes of higher education institutions in Bangladesh. Embedding the kaizen concept within quality assurance initiatives holds promise for elevating Bangladesh's standing in the global education landscape. By embracing kaizen principles, higher education institutions in Bangladesh can incrementally overcome challenges and enhance educational quality, thereby contributing to sustainable development objectives and positioning Bangladesh as a leader in global education.

Keywords: Kaizen, Quality Assurance, Higher Education, Bangladesh

BACKGROUND

Ensuring the quality of merchandise is paramount in the manufacturing industry, as it directly impacts the viability of businesses. Similarly, Higher Educational Institutions (HEIs) bear the responsibility of producing competent graduates and researchers, given that they receive resources from various entities, including the government, to deliver quality education (Boyer, 1990). Against the backdrop of globalization and economic shifts worldwide, the discussion surrounding education policy has placed significant emphasis on quality assurance (QA) in HEIs. Developed nations, in particular, have strived to meet international standards in their higher education systems, prompting researchers, policymakers, academics, and international agencies to prioritize QA in HEIs. Consequently, many countries have established national quality assurance mechanisms to devise effective strategies (Stella, 2004). However, as HEIs proliferate across developing nations, concerns regarding QA persist among academics and researchers (Ehsan, 2008). Notably, South Asian countries face particular challenges in addressing QA in higher education, highlighting the need for concerted efforts to bridge the gap.

For global higher education, the foremost credible and famous source of world university ranking is the Times Higher Education (THE) ranking. THE scrutinize the universities on five parameters namely teaching (30%), citations (30%), research (30%), international outlook (7.5%), and industry income (2.5%). THE disclosed its latest world university ranking on January 26, 2021 (Times Higher Education Ranking, 2021). It is noted that out of one hundred top universities in the world only two universities are from Japan (36th

and 54th), six from China (20th, 23rd, 70th, 87th, 94th, and 100th), three from Hong Kong (39th, 56th, and 56th), two from South Korea (60th and 96th), two from Singapore (25th and 47th) and one from Taiwan (97th) (Times Higher Education, January 2021). There is not one university in South Asia that achieved any position within the top 300 and no university in Bangladesh achieved any position within the top one thousand. On the idea of the assessment, it will be said that higher education matters in South Asia, including Bangladesh, are incredibly dismal. According to Bosworth and Collins (2003) research findings, the higher education quality assurance of 84 countries across the world considering a scale between 72 to minus 12. This study found that India's score was 20.8, Bangladesh earned only 2.8 and Pakistan scored 11.3 (Cited in, Paul 2009). This data indicates that HEIs of Bangladesh do not seem to be producing quality graduates yet as human resources for its society.

Various research and studies, for example, Aminuzzaman (2007), Masum (2008), and Kitamura (2006) mentioned that the quality assurance in higher education in Bangladesh has been declining gradually over the years, especially since 1991 when the democratic government introduced politics in HEIs on a large scale. There exists a scarcity of quality assurance in higher education in Bangladesh. Despite the efforts made by the Bangladesh government for the event of higher education, the HEIs system remains far behind in backing up to international standards (Alam, 2009). To revisit matters and to supply policy suggestions, a variety of research work, most of which are supported by secondary information, was conducted on quality assurance in higher education in Bangladesh. Masum (2008) analyzed some selected issues like teaching, research, access, equity and efficiency, and politicization in HEIs in Bangladesh, and provided some policy recommendations to address these challenges. Monem (2007) addressed the fundamental information of higher education in Bangladesh that covered problems with financing, the position of quality assurance in numerous higher education policies, and major problems in quality assurance of public universities. Andaleeb (2003) analyzed only students' satisfaction within the context of public universities in Bangladesh using a nine-factor model. Huda, Mujaffar, Akhtar, and Ahmed (2010) measured students' satisfaction levels just in the case of educational issues, teaching capacities, research facilities, support services, and general issues within the private universities in Bangladesh. Furthermore, Khan, Mridha, and Barua (2009), Tasnima (2008), and Naser (2008) emphasized the students' perception of the quality assurance of private universities in Bangladesh. Though there are some research works on the quality assurance in HEIs in Bangladesh, it is very difficult to seek out those that captured the students' perception of the quality assurance issue of their higher education considering them as stakeholders or clients or products.

Revolutionizing teaching and research through Kaizen philosophy to achieve quality assurance in higher education has been a vital concern among educators in the academe in the world today (Gordon and Jeanette, 2015). Kaizen, which means continuous improvement, is built on quality assurance as a part of the total process. Thus, to do Kaizen, or to kaizen, is to implement Kaizen philosophy in the name of quality or continuous quality improvement. This concept, first espoused by Masaaki Imai (1996) only to improve industrial efficiency in Japan, has now become an interesting theory in the teaching and research process. In his book, *Kaizen: The Key to Japan's Competitive Success*, Imai stressed that Kaizen is the lone most important concept in Japanese management-the key to Japanese competitive victory. Its success story has been established in many organizations including HEIs around the world. Hence, many authors and educators have tried the effectiveness of principles in teaching and research in their respective areas of specialization. In this connection, this study is an endeavor to search out the policy-makers, scholars, faculty members, and staff's perception of specific problems with the quality of assurance in higher education and it offers the analysis of change in higher education in Bangladesh. From this standpoint, this study is meant to target the quality assurance issues in teaching and research in HEIs in Bangladesh through the implementation of the Kaizen philosophy.

HEIs are places for acquiring new knowledge and can help the nation run properly further by providing educational activities. HEIs can produce critical thinkers and innovators, still as healthy, informed, and

enthusiastic citizens (Chaudhary, Iqbal, and Gillani, 2009). Education for all and quality assurance in higher education are the prime objectives of the government of the People's Republic of Bangladesh (Rahman, 2010). Bangladesh could be a higher-level middle-income country and its economy is in the transition from traditional agriculture to industry, manufacturing, and repair sectors. Bangladesh intends to avail of the opportunities offered by globalization to create a knowledge society. Improving the quality assurance of its HEIs is vitally necessary to spur the country to a better growth trajectory for attaining developed country status by 2041.

Higher education (HE) in Bangladesh, has been facing many deeply rooted and intertwined challenges due to various reasons. These include an inadequate enabling environment for improving the quality of education and research, weak governance and accountability, poor planning and monitoring capacities, corruption, bureaucracy, and insufficient funding. These challenges are compounded by an absence of a strong academic culture. These drawbacks can only be overcome by developing a powerful quality assurance culture and ensuring quality practices in HEIs in Bangladesh. The government of Bangladesh realizes that the country is in danger of being marginalized within a highly competitive global economy because its higher educational activity systems do not seem to be adequately prepared to take advantage of the creation and application of data for graduates. It also realizes that the country has the responsibility to place in situ an enabling policy framework that will encourage teaching institutions to be more innovative and tuned in to the demanding needs for rapid economic progress and to empower the graduates with the proper skills for successfully competing within the global knowledge economy.

From this perspective, the National Education Policy 2010, The Bangladesh Accreditation Council (BAC) Act-2016, the Higher Education Quality Enhancement Project (HEQEP), The Policy regarding the Qualification and Experiences of the Teacher Recruitment and Promotion of Private Universities, Uniform Policy of Recruitment and Promotion/Up-gradation of Teachers for all Public Universities 2017 and so on policies are remarkable initiatives to confirm quality higher education for achieving Sustainable Development Goal-4 in Bangladesh. In Bangladesh, the University Grants Commission (UGC) normally acts as the intermediary between the Government of Bangladesh and also the universities for regulating the affairs of all the HEIs. Currently, there is no recognized quality assurance mechanism except the Accreditation Council Bangladesh (ACB) for these HEIs in Bangladesh. The deficiency was recognized within the UGC's Strategic Plan for Education 2006-2026 and in the Government's National Education Policy (NEP) 2010. The Strategic Plan, inter alia, recommended almost 15 years ago, the establishment of an independent Accreditation Council for HEIs in Bangladesh. Following the recommendations made within the Strategic Plan, the Ministry of Education (MoE) prepared and launched in mid-2009 the Higher Education Quality Enhancement Project (HEQEP) with the backing of the World Bank.

However, on the other hand, the fast expansion of the system with the poor internal management of institutions, low teaching skills, teaching aids, library facilities, availability of books and journals, research facilities, laboratory facilities, corruption, bureaucracy, unplanned expansion, and politics are prime challenges of the quality assurance in higher education in Bangladesh. From this angle, this research will strive to arrive at a strategy for the continual development of HEIs' progress and trouble-free sustainability of changes. This motivation will drive the study to present a task-oriented policy for implementing the Kaizen philosophy rather than these inefficient policies to enhance the outcomes of higher education institutions in Bangladesh. If we infuse this Kaizen concept into achieving quality assurance in teaching and research in HEIs in Bangladesh is going to be ready to hold its head high in the global arena.

LITERATURE REVIEW

Quality Assurance (QA)

Quality assurance is considered a facet of self-appraisal. QA is targeting to provide confidence that quality

requirements are fulfilled. In usual terms, QA involves paying attention to the administrative services, shoppers and assessing and fulfilling the expectations of the consumer's requirements. It also implies the categories of education where graduates are being produced, and which should meet the expectations of the society. The QA matter seems to be the inside mechanism whereby institutions recognize themselves and their customers meet their academic goals. There are some mechanisms for implementing quality assurance. According to Carley and Waldron (1984), QA is a planned, deliberate action or activity instigated and carried out with the intent and purpose of maintaining and improving the quality of learning for participants. According to Knight (2003) audit, accreditation, and evaluation are part of quality assurance in general. QA may be achieved using peer assessment and/or external assessment procedures (Stella, 2004). QA is one way of preventing mistakes and defects in manufactured goods and avoiding problems when delivering goods or services to customers with satisfaction. ISO 9000 has given a famous definition of QA as part of quality management focused on providing confidence that quality requirements are fulfilled (ISO 9000:2005, Clause 3.2.11). This defect prevention in QA in goods and services differs subtly from defect detection and rejection in internal control and has been spoken of as a shift left since it focuses on quality earlier within the process (Larry Smith, 2001). The QA process is like the PDCA cycle. The whole process of quality assurance is called the PDCA cycle. Phases of this quality assurance / PDCA cycle are Plan, Do, Check, and Act

Quality Assurance in Higher Education in Bangladesh

National policies or statements issued by quality assurance agencies or other organizations help bring quality to teaching and research in HEIs. These policies provide a framework to the university authorities for creating a culture of quality in their institutions (OECD, 2010). In this regard, Bangladesh delved into the policy framework and institutional arrangement to ensure the standard of higher education in Bangladesh. The UGC of Bangladesh was founded under the President's Order Number 10 of 1973 which is the only statutory body in Bangladesh to supervise, maintain, promote, and coordinate public and private university education. The key responsibilities of UGC are maintaining the quality and quality of all the general public and private universities in Bangladesh. The UGC is additionally assigned to assess the wants of the general public universities in terms of funding and to produce advice to the Government on various issues associated with higher education in Bangladesh (UGC, 2014). It is alleged that the UGC is not as successful because it was expected to manage the general public universities. But in practice, the educational standards of Bangladeshi universities are still very weak and HSE did not bring any positive results. However, no noteworthy initiative has been taken by UGC to introduce a self-regulatory accreditation system for public or private universities (Chauhan, 2008).

Public universities are formed under a separate act of the parliament in Bangladesh. In keeping with this act, the respective university enjoys enormous power in opening new subjects, creating posts of schools, human resource management, including reward and punishment, preparing syllabi and curricula, and so on. The Academic Committee of each public university is formed by all faculty members of the department. They are allowed to supervise, monitor, teach, and guide the department to keep its activities on the right track for achieving its ultimate objectives in the department. All the teachers of the department are members of a "committee of courses", and external members (one or two) are invited by the department from outside the university who have a reputation for their expertise in this field. Usually, the department organizes the meetings of a committee of courses once a year to revamp or revise the curriculum. After evaluating the curriculum, the department submits it to the college meeting. After getting approval from the college meeting, it goes to the "academic council" of the university. According to laws and regulations, public universities encompass a wide-ranging institutional framework to oversee educational institutions, but compliance with these rules and regulations in a detailed manner is rare. In most cases, authorities organize meetings just to maintain formalities. Academic staff does not seem to be curious about academic issues because they are attached to different kinds of other activities like consultancy, class taking in private

universities, and politics. In some cases, syndicate and decision-making bodies overlook malpractices and non-compliance to the foundations and regulations. Despite getting a legal-institutional framework for ensuring quality and preventing malpractices, in reality, there has been little organized effort. Interpersonal communication, intra-party and inter-party ties, kith and kin networks, regional identity/regionalism (coming from identical geographical areas), and former teacher-student relationships hamper the standard control mechanism within the public university. Bangladeshi society is hierarchical, and because of the dominance of collectivism, people attempt to maximize the good things about friend networks, relative networks, and political networks to get undue benefits which foster partiality and bias (Siddique, 2006; Aminuzzaman, 1993; and Jamil, 2007).

Kaizen Philosophy in Higher Education

The Kaizen philosophy is used in many branches of business as well as human resources in education, manufacturing, and hospitals. For instance, Kaizen costing was used for cost efficiency where Kaizen costing refers to a technique that aims to continuously improve the production processes to achieve this target cost by determining a target cost and to ensure cost-effectiveness, and it is regarded as a technique that is used to reduce the costs and continuously monitor the cost reductions at every stage of production. The philosophy of Kaizen in higher education was developed by Imai (2004). Wilson (2012) described that; substantial teaching methodologies to seek improvement, the Kaizen concept in education will help students to implement new things. Kaizen costing is used in the manufacturing industry, housing companies, transport industry, and others for cost minimization (Duran & Mertol, 2020). The Kaizen suggestion system was also used for increased job security in which all employees were given the necessary training and the Kaizen suggestion forms developed for the company were used and evaluated. Kaizen philosophy is used in the continuous improvement of human resources development in clinics and hospitals where patient focus, service delivery, process improvement, and employee empowerment are the main principles or denominators. The Kaizen approach is used to improve the quality of the final products in the manufacturing sector (Duran & Mertol, 2020). It can be used in low-cost and high-quality products/services in the public sector (Duran & Mertol, 2020). While Kaizen's philosophy or approach can be used in many areas. Therefore, Kaizen philosophies are used in the higher education sector and the curriculum development arena because the purpose of Kaizen is continuous development in any given system through human collaboration and efforts. From the perspective of Kaizen philosophy, education management has two major functions: one is maintenance and another is improvement. Maintenance emphasizes the practices aimed at preserving and enforcing current standards of ICT, management, leadership, and service through training and discipline mechanisms. Meanwhile, improvement refers to exercises aimed at developing present methods and standards (Imai, 2014). Therefore, the curriculum can be conceived in terms of two aspects as improvement and maintenance in the context of the Kaizen approach. Improvement begins from students to the MoE and vice versa and maintenance is achieved from hidden curriculum to formal curriculum supported by the null curriculum, extra curriculum, and informal curriculum. Formal curriculum refers to the strategic program of objectives, content development, learning experiences, resources, and assessment offered by HEIs. An informal curriculum indicates co-curricular activities that happen outside of the formal educational environment and the content of the formal curriculum. Extra-curriculum includes nonobligatory activities for the pupils. Extra-curricular activities are very important for Kaizen philosophy because it is related to the value-adding activities and subjects matter. The null curriculum covers topics omitted as unimportant from the formal curriculum. Lastly, the unseen syllabus and curriculum cover the values that are transferred by social relationships and teachers in the school setting that are not explicitly emphasized (Arslan & Akbulut, 2018; Posner, 1995). This ensures that the tools and materials necessary for transition can be quickly and effectively rendered at the disposal of the participating team (Davis, 2011). The roles of all stakeholders in the maintenance of the curriculum, in this regard, are given in Table 1.

Table 1 Participation hierarchy for the application of Kaizen in curriculum development

Ministry of Education	School Administration	Teachers	Students
It is committed to launching Kaizen as a strategy	It disseminates and executes Kaizen objectives through policy extension and cross-functional activities as determined by senior management	Uses Kaizen in functional roles	Participates in Kaizen with suggestion system and small group activities
Provides support and direction to Kaizen by providing resources	Uses Kaizen in functional activities	Prepares and guides students	Follows disciplines in universities
Creates policy and cross-functional objectives for Kaizen	Set, maintain and improve standards	Strengthens communication with students and provides high morale	Continuously improves themselves to better solve problems
It conducts policy dissemination and achieve Kaizen objectives	Implements Kaizen awareness to employees through training programs	Supports small group work and individual suggestion systems such as quality circles	Improves talent and experience with cross-training activities
Build systems, processes and structures for Kaizen	Helps employees develop skills and problem-solving tools	Creates Kaizen suggestions	

Source: Imai (2014)

Table 1 shows that the Kaizen philosophy gives responsibilities to all stakeholders associated with the curriculum development process. It should be noted that Kaizen proposals that are formulated without all stakeholders 'opinions would probably fail altogether or will need to be updated later if introduced. Without the active cooperation of all stakeholders, true Kaizen cannot achieve its objectives (Mcloughlin & Miura, 2018). When the table is analyzed, unless the proper people are involved in the right tasks, Kaizen should never be meted out automatically. The correct people involve the establishment of a cross-functional group of participants and a few of whom have complete decision-making powers without anybody's approval (Davis, 2011). It can even be seen that the concept of agency is emphasized in three levels as student agency, teacher agency, and collective agency in Table 1. Generally, the concept of agency refers to the capacity for deliberation or maybe a special reasonable knowledge of one's actions (Misselhorn, 2015). The concept of agency refers to somebody's ability to behave on their own and make free choices. At the very least the term 'agent' implies (i) a personal, and (ii) a capacity for action (Stapleton & Froese, 2015). However, it should be noted that there are structural factors that determine or restrict a person and their actions, like class, ideology, gender, race, skill, and traditions. However, the agency could be a significant factor for all the amount of the development of the curriculum from students to teachers to the institutions. Student agency refers to the individual agency implying that human agents are attentive to their own choices (Gabbay & Woods, 2005) moreover it gives students a full-of-life role in trying to find and internalize new knowledge (Zeiser, Scholz, & Cirks, 2018).

In many modern learning theories, it is emphasized that the teaching process should be student-centered

instead of teacher or content-centered. However, the term student-centered is usually used as an idea indicating the arrangement of the activities within the classrooms where students are more active and independent but leaving blank how students are motivated and a lively agent of their learning. Teaching without student agency and student motivation is as vain as the other modern techniques proposed by modern educational approaches like constructivism. Student agency refers to the standard of students' self-reflective and intentional action and interaction with their surroundings by including concepts of agentic possibility and agentic orientation. Klemenčič (2015). In this perspective, it should be noted that the Kaizen philosophy stresses student activity, not student power. Kaizen philosophies make sure the students should possibly be active to possess an influence on their job, their future lives, and their immediate and bigger social setting process (Klemenčič, 2015).

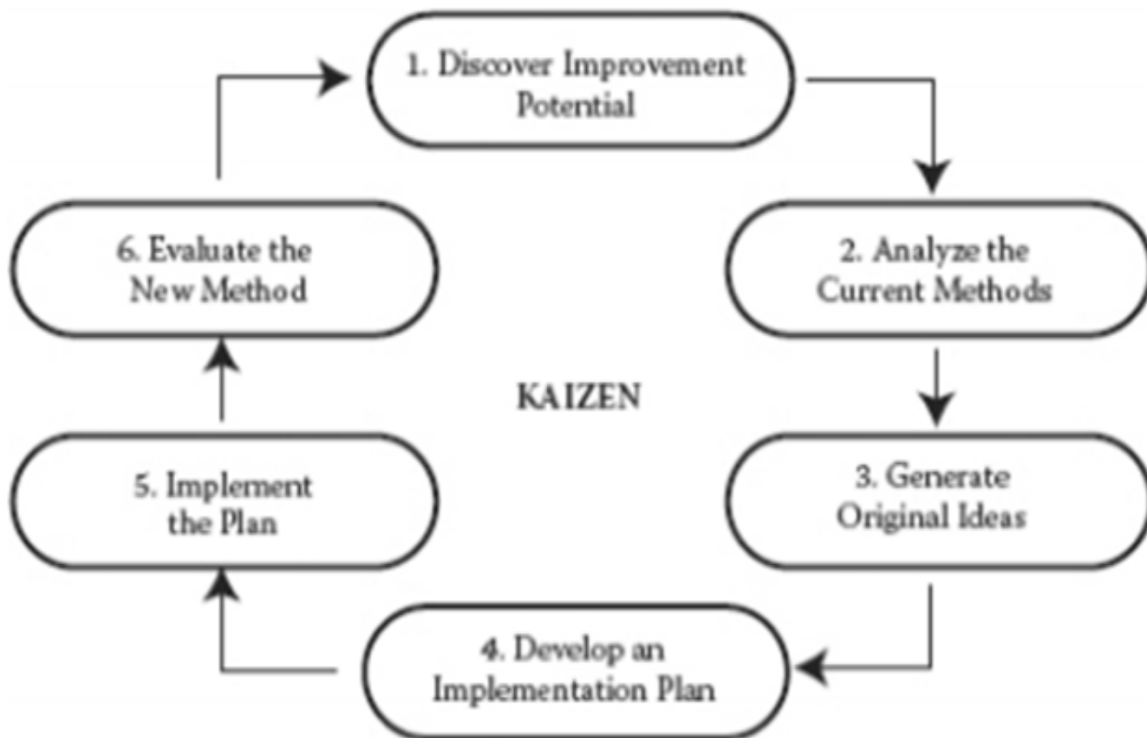
A second important factor for the advancement of the curriculum is that teacher agency considers teachers as actors acting using an environment rather than simply in an environment (Biesta & Tedder, 2006). Teacher agency in this regard is viewed in terms of dimensions proposed by The Triadic Reciprocity Framework Core Agency Concepts (TRFCAC) model as self-reactiveness (self-regulations, choices, action plans, implementation, thoughts) self-reflectiveness (self-examining), intentionality (self-organizing, indications for change, action plans, and strategies), forethought (visualizing futures, proactive) (Jenkins, 2019). Because the Kaizen approach emphasizes human efforts, morale, involvement, and self-discipline (Imai, 2014), it also supports positive student and teacher agency in this respect. Finally, the Kaizen approach underlines the concept of gathering agency so as for the event of curriculum furthermore, the actualization of student and teacher agency because, without collective agency, all other agencies are individual efforts that are on hiding to nada. All agency types and each agent act by direct or indirect intervention or other agents and agencies so that they are not autonomous in this respect but they are autonomous by having the power to change their state without direct response to interaction through performing internal transitions to change their states (Floridi & Sanders, 2004; Misselhorn, 2015). Collective agency refers to a social state where individuals try to work together to achieve what they will not achieve by themselves (Johnson & Johnson, 2015). It requires collective synchronization, coordination, and cooperation further as a collective goal resulting in collective goal-directed behavior within which the actions of the individual agents must be directed at the identical goal, and their behavior must be coordinated in an exceedingly specific way in terms of behavioral and cognitive dimension (Misselhorn, 2015).

In the context of the concept of agency, it is easily concluded that an accurate curriculum should not be taken because the only real factor for the maintenance of a curriculum supports Kaizen principles. The selection of curriculum types suggested by Posner (1995) originated to the fore for such maintenance supported Kaizen philosophies so that different agency types are realized from distinctive equal to communal phase. The operational curriculum is the place where the formal curriculum is actualized. Hereafter, Kaizen principles are often realized within the teacher's hands, because the operational curriculum is concerned with the teacher's understanding and insight of the formal program and is closely related to the teacher's training and competencies. It is mainly related to the teacher agency so that maintenance of the curriculum is typically actualized. During this type of program, the teacher perceives and conveys the activities within the united annual plans and lesson plans, and thus the scholars are imagined to receive them. Now, it is predicted that improvements in teacher competencies within the program process will make positive contributions to the actualization of Kaizen principles within the official curriculum. Extra curriculum means the planned functions outside the formal curriculum. The extra curriculum includes some activities outside the official program, including musical, educational, social, cultural, and sporting activities. In this fashion, it is often utilized in developing conditions that cannot be foreseen by or distinguished by the official scheme, since it is the informal involvement that is voluntary and receptive to any or all students and thus improves the scholar agency. Therefore, it provides flexibility to the maintenance of the curriculum within the context of Kaizen principles. Another quiet curriculum within

which the actualization of Kaizen principles is additionally neglected is the null curriculum. This curriculum refers to the curriculum subjects that are within the official program that are skipped. Infrastructural problems within the colleges are the foremost reason for the emergence of this sort of curriculum. The null curriculum could also be a threat to the maintenance of the curriculum therefore infrastructural changes should be provided.

Another type of program that can play both positive and negative roles in the actualization of the curriculum is the hidden curriculum. This type of curriculum, which is affected by the school climate and culture, also reflects informal learning about values, attitudes, and beliefs that are not included in the official program. There might be positive and negative aspects of the hidden curriculum that can both provide dynamism as well as obstacles to the actualization of the curriculum. Therefore, if it is desired that Kaizen principles should be implemented in the curriculum, fieldwork should be conducted based on school types, regions, and even individual bases as well as particular schools. As for the Kaizen implementation, there are six steps for developing Kaizen at different levels of curriculum development (Figure 1). The first step is to Discover the Improvement Potential referring to help students, teachers, and administrators to learn to look more specifically at the problems and the potential improvement around them. The second step is given as Analyze the Current Methods indicates to teach people how to conduct simple learning and teaching methods analysis. The third step for the implementation of the Kaizen philosophy is to generate real ideas to assist people to start creating original ideas for continuous improvement. The fourth step of the Kaizen is to Develop an Implementation Plan including a —just-do-it type of thinking, or plans that require more coordination and careful thought. The fifth step is to Implement the Plan indicating the actualization of the plan as well as Kaizen principles. The sixth step is to assess the new method in which mistakes and recommendations are shown depending on shared expertise (Kato & Smalley, 2015). For the internal and external assessment of the curriculum development process, a process-oriented philosophy or approach also should be realistic within the beginning or inaugurating of the various Kaizen strategies.

Figure 1 Six steps of Kaizen in higher education



Source: Kato and Smalley (2015)

For example, the plan-do-check-act (PDCA) cycle; the standardize-do-check-act (SDCA) cycle; quality, cost, and delivery (QCD); total quality management (TQM); just-in-time (JIT); and total productive maintenance (TPM) (Imai, 2014). In this respect, the plan-do-check-act (PDCA) cycle may well be a vehicle that ensures the continuity of Kaizen in providing a technique for maintaining and improving standards of curriculum development. The two core scientific methods of PDCA and SDCA represent the center of what is also considered a Kaizen system.

This system shown in Figure 1 is all-inclusive and includes an underlying philosophy including principles as follows (Hamel, 2010):

1. Think PDCA and SDCA, the basic scientific methods of Kaizen.
2. Move to Gemba, observe and document reality.
3. Ask —why? Five times to identify the fundamental causes.
4. Be dissatisfied with the establishment.
5. Kaizen is what matters.
6. Have a bias for action.
7. Frequent, small incremental improvements drive big, sustainable improvements.
8. Use creativity before capital.
9. Kaizen is everyone's job.
10. No transformation without transformation leadership.
11. Do everything modestly and honorably for the individual.

This is the system of the numerous methods applied; their order in thought or action. Some methods are going to be given as follows:

1. Scientific (how to think).
2. Emphasis and arrangement (where and when to apply).
3. Deployment vehicles (how to do and do it).

Tools are often defined due to the varied circumstances and, as appropriate, Six Sigma techniques employed within the methods. Cultural enablers are the organization's distinctive behavior patterns, founded upon humility and respect for the individual, facilitate and encourage continuous improvement (Figure 2) (Hamel, 2010). The plan refers to establishing general aims for the improvement of the curriculum. Decisions to be taken in the planning phase should be based on real data and realistic when determining work or goals. Initially, if very high targets are set and they are not achieved, motivation will decrease and inefficiency will begin. Additionally, it includes;

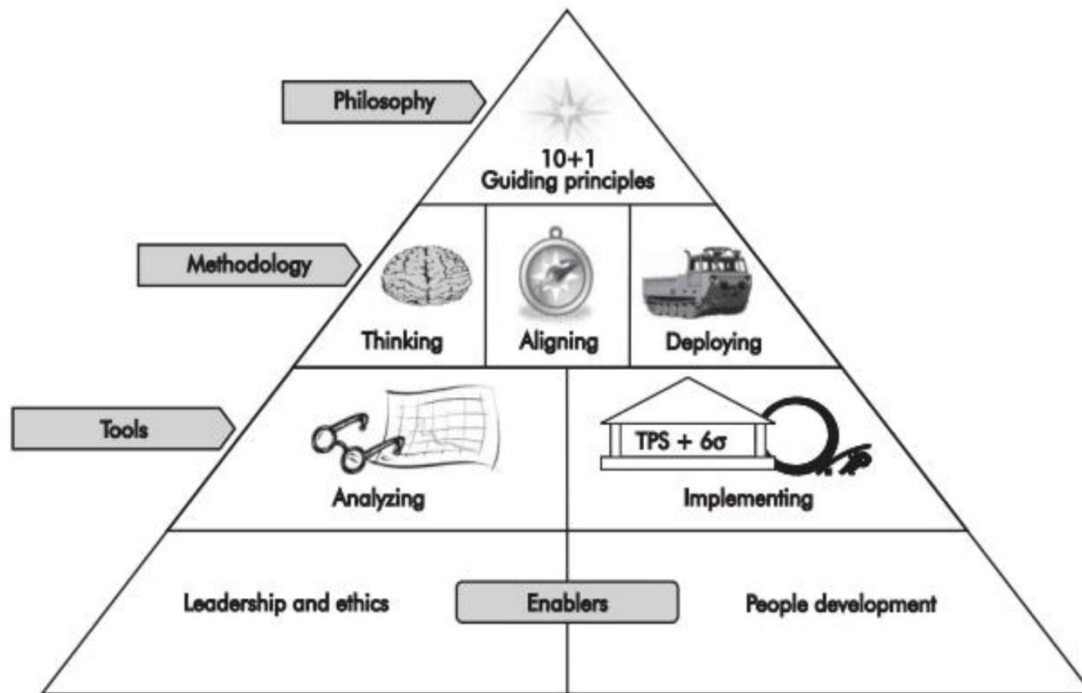
I- Creating program development working groups;

II- Program development work plan;

III- Arranging required infrastructure and materials for the curriculum development process.

A detailed needs evaluation is also key to any type of planning. A comprehensive needs assessment is a form of systematic decision-making and is the first phase of continuous improvement preparation (Education Quality and Continuous Improvement Framework, 2018). At this stage, identification of research design and data collection methods for evaluation purposes, determination of which measurement tools will be used for what purposes, when, how, and how many times, and the validity and reliability studies of these tools are included (Ozdemir, 2009). It contains those steps (Education Quality and Continuous Improvement Framework, 2018; Kaya, 1997):

Figure 2 The Kaizen system in higher education



Source: Hamel (2010)

- 1) Confirmation of the meaning (revealing what program evaluation means).
- 2) Determination of the purpose and shared vision.
- 3) Identification of key parties and collaborative stakeholders.
- 4) Identification of scope or opportunities and threats as well as problems.
- 5) Shaping the questions to be answered and results from root cause analysis.
- 6) Shaping the theory of improvement/ necessary action for this objective.
- 7) Determining ideas for change.
- 8) Finalization of the draft. Do refers to implementing the plan (Imai, 2014).

It corresponds to collecting the data from various sources for needs analysis as well as the preparation of another research. In this stage, research design, population and sample selection, data collection, analysis, and interpretation of results are carried out by the decisions taken during the planning stage, and evaluation is reported (Ozdemir, 2009).

METHODOLOGY

Among the five types of samples, four types of samples were used for the data analysis from 49 public universities, 107 private universities, 2 international universities, 31 specialized colleges, and 2 special universities (UGC, 2021) which are engaged in providing higher education in Bangladesh. In addition,

representatives from the MoE, UGC, the DSHE, and a few education experts were interviewed for data analysis (Table 2). In the first case, students, and faculty members of Dhaka University, in the second case, from National University, in the third case, from BUET, in the fourth case, students and faculty members from ten private universities were given a separate Google Form for the data collection on a random selection basis. However, in the fifth case, officials from the MoE, the UGC, and the DSHE were interviewed.

Table 2 Number of respondents from each university/office

University/Agency	Total Number of Respondents		Respondents Responses	
	Teachers	Students	Teachers	Students
Dhaka University	523	1530	50	86
National University	378	790	30	64
BUET	136	478	24	23
Private University	217	279	28	38
Sub-Total	1254	3077	132	211
Policy-makers (government officials from MoE, UGC, DSHE) and education experts	245		25	
Grand Total	4576		368	

The researcher selected the participants who were available and accessible at that time. This research study is mainly qualitative. One method is not appropriate for justifying the research. Thus, qualitative data has been converted into quantitative data by using 5 points Likert-type scale from Strongly agree / highly satisfactory / highly appropriate / 90% or above, agree /satisfactory / 80% to < 90%, neutral /70% to < 80%, disagree / dissatisfactory / 60% to < 70% and strongly disagree / strongly dissatisfactory / <60%. Strongly agree (Highest satisfaction) level got 5 points, agree level got 4 points, neutral level got 3 points, disagree level got 2 points, and strongly disagree (lowest satisfaction) level got 1 point. Collected data has been analyzed by using a weighted average, percentage, and mean score. The collected data were first converted into percentages accordingly in terms of research questions and themes. The interview questions are matched to answer the three research questions. The descriptive statistical method is used to organize interview data into a limited number of themes and issues around these questions. Numeric data are also compared with the data from the interviews to see if they are in corroboration.

RESULTS

McGer (2019) mentioned Kaizen as a comprehensive development strategy that refers to the standard development that is disbursed continuously as a kind of existence within the world of higher education. The implementation of Kaizen as an innovative and strategic step in improving the standard of higher education is ready to unravel the issues faced within the implementation of integrated schools completely through the invention of root causes and find solutions as a kind of continuous quality improvement (continuous improvement). Efforts through the Kaizen model emphasize improving the standard of education continuously and continuously which is oriented to the problem of making a culture of HEI's quality. The implementation process involves all components of the HEIs and their stakeholders. Kaizen as an innovative strategy underlies tertiary institutions to continuously improve their quality. The basic orientation of implementation is gradual and planned through various corrective and quality improvement measures. Imai (2005), states that the primary step of Kaizen is to implement the PDCA (Plan, Do, Control, and Act) cycle as a way of ensuring the sustainability of Kaizen. This can be useful in realizing policies to keep up and improve or improve standards. The role of human resources is incredibly significant for implementing the Kaizen philosophy. Supporting the reason, improving the quality assurance of higher education through the

implementation of Kaizen could be a strategic framework and innovation within the quality of education productivity. In this situation, the implementation of the Kaizen philosophy may be a very good solution to overcome existing challenges in higher education in Bangladesh. Table 3-7 and appendix A and B show the background for the implementation of Kaizen philosophy in HEIs.

Higher education institution authority should implement a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh

It is evident from Table 3 that 88% of teachers (Strongly agree 52.4%+Agree 35.6%) in selected universities gave their opinion that HEIs authority should implement a new philosophy to overcome existing challenges in higher education in Bangladesh. However, 55.6% (Strongly agree 37.1%+Agree 18.5%) of students in the research area opined that HEIs authority should implement a new philosophy to overcome existing challenges in higher education in Bangladesh. Hence, there is a significant 32.4% (88%-55.6%) difference in the opinions given by the teachers and students. This data reflects that teachers are more concerned about quality assurance in Bangladeshi HEIs compared to students. On the contrary, 7.5% of teachers (Strongly disagree 4.5%+Disagree 3%) gave an opinion that HEIs authority should not implement a new philosophy to overcome existing challenges in higher education in Bangladesh. At the same time, 31.7% of students (Strongly disagree 14.6%+Disagree 17.1%) gave an opinion that HEIs authority should not implement a new philosophy to overcome existing challenges in higher education in Bangladesh. Thus, there is a huge 24.2% (31.7% – 7.5%) difference in the opinion given by the teachers and students. While 4.5% of teachers and 12.7% of students were neutral about this question. Table 3 demonstrates that the mean score is about 4.03 (Teachers 4.28 and students 3.46) on a scale of 5.00. From this analysis, it is clear that HEIs authority should implement a new philosophy to overcome existing challenges in higher education in Bangladesh.

Table 3 Implementation of a new philosophy to overcome existing challenges in HEIs in Bangladesh

Range of Class	Teachers' Opinion			Students' Opinion		
	Respondents	Percent	Score	Respondents	Percent	Score
≥ 90%	69	52.4	345	76	37.1	380
80% to < 90%	47	35.6	188	38	18.5	152
70% to < 80%	6	4.5	18	26	12.7	78
60% to < 70%	4	3	8	35	17.1	70
<60%	6	4.5	6	30	14.6	30
Total	132	100	565	205		710
Mean			4.28			3.46

Higher education institution authority should implement the Kaizen philosophy for quality assurance in Bangladesh

According to data provided in Table 4, 84% of teachers (Strongly agree 54.5%+Agree 29.5%) in selected universities gave their opinion that HEIs authority should implement the Kaizen philosophy for quality assurance in Bangladesh. Whereas, 61.7% (Strongly agree 46.1%+Agree 15.6%) of students in the research area opined that HEIs authority should implement the Kaizen philosophy for quality assurance in Bangladesh. Therefore, there is a big 22.3% (84%-61.7%) difference in the opinions given by the teachers and students. This data reflects that teachers are more concerned about quality assurance in Bangladeshi higher education compared to students. On the contrary, 7.7% of teachers (Strongly disagree 2.4%+Disagree 5.3%) gave an opinion that HEIs authority should not implement the Kaizen philosophy for quality assurance in Bangladesh. Similarly, 22.1% of students (Strongly disagree 9.8%+Disagree 12.3%) gave an opinion that HEIs authority should not implement the Kaizen philosophy for quality assurance in

Bangladesh.

Table 4 Implementation of Kaizen philosophy for quality assurance in Bangladesh

Range of Class	Teachers' Opinion			Students' Opinion		
	Respondents	Percent	Score	Respondents	Percent	Score
≥ 90%	72	54.5	360	94	46.1	470
80% to < 90%	39	29.5	156	32	15.6	128
70% to < 80%	11	8.3	33	33	16.2	99
60% to < 70%	7	5.3	14	26	12.3	52
<60%	3	2.4	3	20	9.8	20
Total	132	100	566	204	100	769
Mean			4.29			3.77

Thus, there is a slight 14.4% (22.1% – 7.7%) variation in the opinions given by the teachers and students. While 8.3% of teachers and 16.2% of students were neutral about this question. Table 4 demonstrates that the mean score is also about 4.03 (Teachers 4.29 and students 3.77) on a scale of 5.00. From this analysis, it is clear that HEIs authority should implement the Kaizen philosophy for quality assurance in Bangladesh.

Kaizen is the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh

Table 5 shows that 87.2% of teachers (Strongly agree 56.1%+Agree 31.1%) in selected universities gave their opinion that Kaizen is the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh. Similarly, 60.9% (Strongly agree 46.3%+Agree 14.6%) of students of the research area opined that Kaizen is the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh. Therefore, there is a massive 26.3% (87.2%-60.9%) difference in the opinions given by the teachers and students. This data reflects that teachers are more concerned about quality assurance in Bangladeshi higher education compared to students. On the contrary, 3.8% of teacher (Strongly disagree 2.2%+Disagree 1.5%) gave an opinion that the Kaizen is not the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh at the same time, 22% of students (Strongly disagree 9.8%+Disagree 12.2%) gave an opinion that Kaizen is not the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh. Thus, there is a big 18.2% (22% – 3.8%) difference in the opinion given by the teachers and students. While 9.1% of teachers and 17.1% of students were neutral about this question. Table 5 demonstrates that the mean score is about 4.07 (Teachers 4.37 and students 3.76) on a scale of 5.00 which states that the Kaizen is the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh. From this analysis, it is clear that Kaizen is the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh.

Table 5 Kaizen as the exact method and procedure to overcome the challenges of quality assurance in HEIs

Range of Class	Teachers' Opinion			Students' Opinion		
	Respondents	Percent	Score	Respondents	Percent	Score
≥ 90%	74	56.1	370	95	46.3	475
80% to < 90%	41	31.1	164	30	14.6	120
70% to < 80%	12	9.1	36	35	17.1	105
60% to < 70%	2	1.5	4	25	12.2	50

<60%	3	2.2	3	20	9.8	20
Total	132	100	577	205	100	770
Mean			4.37			3.76

Ministry of Education can establish a Kaizen department for quality assurance in higher education in Bangladesh

According to Table 6, 90.9% of teachers (Strongly agree 57.6%+Agree 33.3%) in selected universities gave their opinion that the MoE can establish a Kaizen department for quality assurance in higher education in Bangladesh. However, 61% (Strongly agree 43.4%+Agree 17.6%) of students in the research area opined that the MoE can establish a Kaizen department for quality assurance in higher education in Bangladesh. Therefore, there is a huge 29.9% (90.9%-61%) difference in the opinions given by the teachers and students. This data reflects that teachers are more concerned about quality assurance in Bangladeshi higher education compared to students. On the contrary, 4.5% of teachers (Strongly disagree 3%+Disagree 1.5%) gave an opinion that the MoE cannot establish a Kaizen department for quality assurance in higher education in Bangladesh. At the same time, 22.9% of students (Strongly disagree 10.2%+Disagree 12.7%) gave an opinion that the MoE cannot establish a Kaizen department for quality assurance in higher education in

Table 6 Establishing the Kaizen department for quality assurance in higher education in Bangladesh

Range of Class	Teachers' Opinion			Students' Opinion		
	Respondents	Percent	Score	Respondents	Percent	Score
≥ 90%	76	57.6	380	89	43.4	445
80% to < 90%	44	33.3	176	36	17.6	144
70% to < 80%	6	4.5	18	33	16.1	99
60% to < 70%	2	1.5	4	26	12.7	52
<60%	4	3	4	21	10.2	21
Total	132	100	582	205	100	761
Mean			4.41			3.71

Bangladesh. Thus, there is a significant 18.4% (22.9% – 4.5%) difference in the opinions given by the teachers and students. While 4.5% of teachers and 16.1% of students were neutral about this question. Table 6 demonstrates that the mean score is about 4.06 (Teachers 4.41 and students 3.71) on a scale of 5.00 which states that the MoE can establish a Kaizen department for quality assurance in higher education in Bangladesh. From this analysis, it is very clear that the MoE can establish a Kaizen department for quality assurance in higher education in Bangladesh.

Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by the University Grants Commission in Bangladesh

Table 7 shows that 90.2% of teachers (Strongly agree 53.8%+Agree 36.4%) in selected universities gave their opinion that the Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh. Similarly, 60.8% (Strongly agree 46.1%+Agree 14.7%) of students in the research area opined that the Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh. Therefore, there is a big 29.4 % (90.2% – 60.8%) difference in the opinion given by the teachers and students. This data reflects that teachers are more concerned about quality assurance in Bangladeshi HEIs compared to students. On the contrary, 3.8% of teachers (Strongly disagree 2.3%+Disagree 1.5%) gave an opinion that the Kaizen philosophy cannot be an alternative and the best

approach compared to the accreditation council which is implemented by the UGC. At the same time, 24.5% of students (Strongly disagree 11.8%+Disagree 12.7%) gave an opinion that the Kaizen philosophy cannot be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh. Thus, there is a huge 20.7% (24.5% – 3.8.%) difference in the opinion given by the teachers and students. While 6.1% of teachers and 14.7% of students were neutral about this question. Table 7 demonstrates that the mean score is about 4.04 (Teachers 4.38 and students 3.70) on a scale of 5.00 which states that the Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh. From this analysis, it is very clear that the Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by UGC.

Table 7 Kaizen philosophy as an alternative and the best approach compared to the accreditation council

Range of Class	Teachers' Opinion			Students' Opinion		
	Respondents	Percent	Score	Respondents	Percent	Score
≥ 90%	72	53.8	360	94	46.1	470
80% to < 90%	48	36.4	192	30	14.7	120
70% to < 80%	8	6.1	24	30	14.7	90
60% to < 70%	2	1.5	4	26	12.7	52
<60%	3	2.3	3	24	11.8	24
Total	133	583		204	100	756
Mean		4.38				3.70

Government Officials Interviews and Consultative Questionnaire

When they were asked about the exact methods and procedures that will be focused on by the authority to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh, they mentioned some important points. They are as follows:

- Teachers' quality improvement and institutional capacity building
- Change the current education system
- To follow the successful educational structure of any developed country
- Bureaucratic-free education system
- Proper training and a corruption-free education system
- Recruit skilled and enriched faculty to update the curriculum
- Fair selection of teachers
- Increase of funds in the education sector
- Remove every institution from government custody and political effects
- Quality full research for the upgraded education system, decrease political interference in institutions
- Teachers should be cordial to the students and education should be free from politics
- The faculty and authority of the university should be cordial and supportive
- Update system to meet global standard
- Government should provide adequate funds for research and teachers & students should focus on research
- Kaizen may be a helpful method

This is very interesting that except for five respondents, no one mentions any methods and procedures to overcome the existing challenges faced by Bangladeshi higher education institutions in teaching and research. They have given some solutions to overcome a few challenges. They failed to mention any holistic

approach to overcome these challenges they mentioned earlier. They were asked that HEIs authority should implement a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh. 17 out of 25 respondents said that HEIs authority should implement a new philosophy to overcome existing challenges in higher education in Bangladesh, the other 8 did not. They were asked if Kaizen's philosophy is applicable to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh. Out of 25, 20 respondents agreed with their opinion about the implementation of the Kaizen philosophy in Bangladeshi higher education. Some of them pointed out as follows:

- The Kaizen Method will be appropriate to overcome the challenge in higher education.
- Kaizen is a continuous improvement of the process that should be applied in higher education institutions.
- The Kaizen may be a good method to reduce existing challenges.
- The Kaizen method should be focused by the authority to overcome challenges of quality assurance in higher education in Bangladesh.
- By identifying the problems of current situations in the higher education system and focusing on that the authority can establish implementing the new methods like Kaizen to bring change and improvement.
- The Kaizen philosophy could be implemented to overcome the challenges, but it will require long-term planning.

When the officials were asked that HEIs authority should implement the Kaizen philosophy for quality assurance in teaching and research in Bangladesh. 18 out of 25 said that HEIs authority should implement the Kaizen philosophy to overcome existing challenges in higher education in Bangladesh, the remaining 7 were in favor of the UGC in Bangladesh. When the policy-makers and education experts were asked that how the Kaizen philosophy would apply to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh. An informant said that "Kaizen philosophy should include in the university course". Another informant replied that "the MoE can establish a Kaizen unit like SDG cell". When the policy-makers and education experts were asked that the MoE could establish a Kaizen department for quality assurance in teaching and research higher education in Bangladesh. An important policymaker and education expert mentioned that "the MoE can take necessary action to implement Kaizen in HEIs". Out of 25 official respondents, 14 agreed to establish a Kaizen department under the MoE and 7 respondents were in favor of UGC, and 4 were neutral. However, all of them suggested that this department should be independent and out of government and political intervention. When the policy-makers and education experts were questioned that Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh. Interestingly 22 respondents agreed that Kaizen can be a very good alternative if this system can work neutrally and without political control. Five respondents were in favor of the existing accreditation council under UGC Bangladesh. When the policy-makers and education experts were queried that the implementation of the Kaizen philosophy for quality assurance in higher education would allow the gaps of all previous weak policies. Out of 25 respondents, 15 respondents agreed that the Kaizen philosophy would allow the gaps of all previous weak policies, and 10 did not. All the respondents were asked about their specific suggestions or recommendations regarding the implementation of the Kaizen philosophy. According to the respondents, several steps needed for the implementation of the Kaizen philosophy are:

- Rule of law in higher education needs to be ensured
- Consciousness among teachers, students, and policymakers needs to be increased
- Consciousness among teachers, students, and policymakers needs to be increased
- A balanced distribution of work
- Active and equal participation of teachers, students, and policy-makers must be ensured

- Training is important for the implementation of the Kaizen philosophy
- The budgetary system needs to be revised
- Decentralization of workload
- Identifying major drawbacks in higher education
- The university can start the Kaizen concept in each department like a few primary schools in Bangladesh
- Regular monitoring
- Implement performance appraisal system
- Encourage quality research among faculty members and students
- Submission of performance report to the government
- Awarding incentives based on performance
- Proper policy formulation for implementation of Kaizen

Implementation of the Kaizen Philosophy

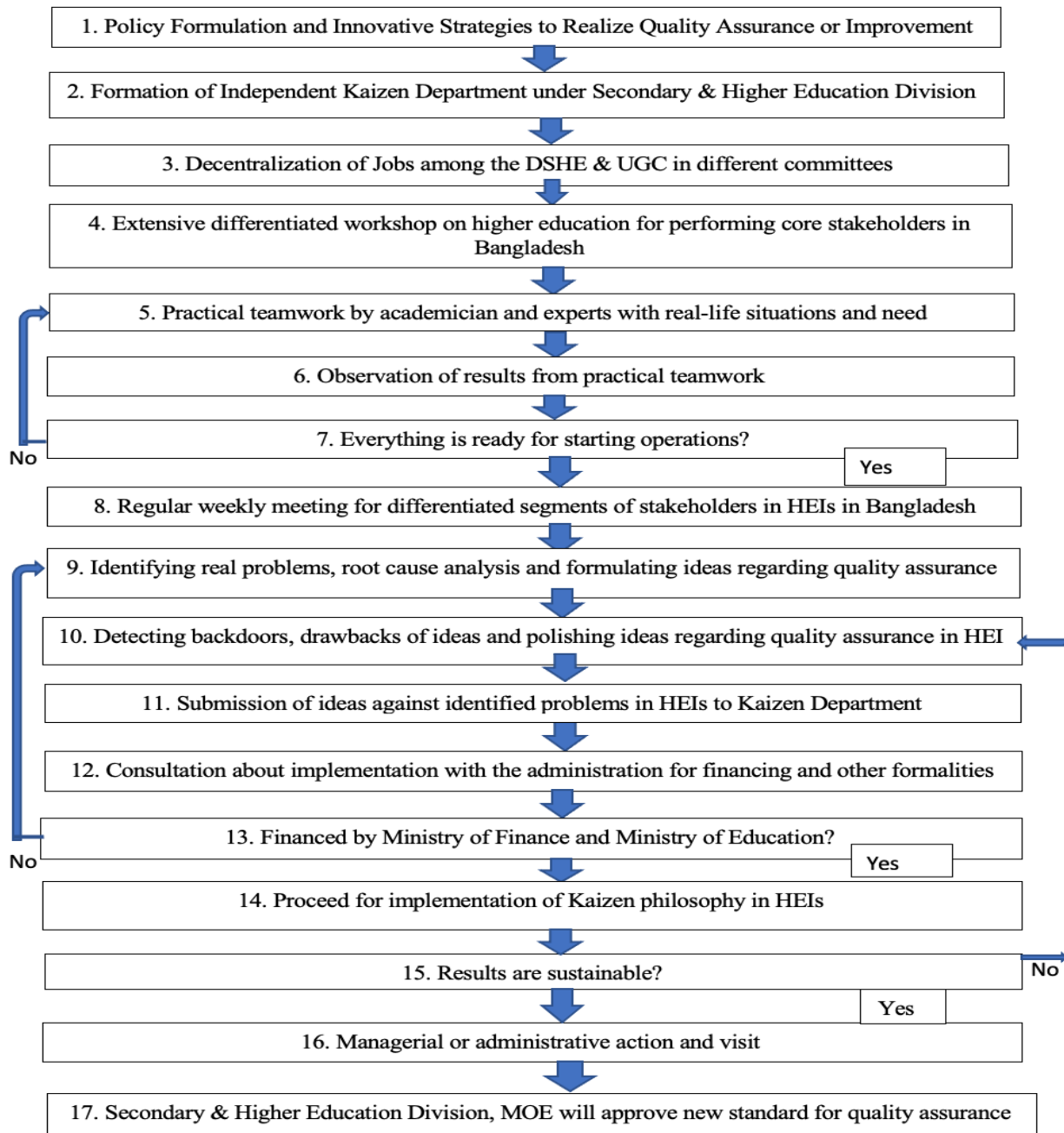
From the literature review and data analysis in tables 3-7, it is clear that authorities should implement a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh. 88 % of teachers and 55.6% of students of the research area opined that higher education institution authority should implement a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh. Data also demonstrates that the mean score of opinion of teachers and students about higher education institution authority's implementation about a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh is at 4.28 and 3.46 respectively (average 4.03) on a scale of 5.00. From this analysis, it is clear that higher education institution authority should implement a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh. In this case, 84% of teachers of and 61.8% of students of the research area opined that higher education institution authority should implement Kaizen philosophy (*Mean 4.03*) for quality assurance in teaching and research in Bangladesh. From this analysis, it is clear that higher education institution authority should implement Kaizen philosophy for quality assurance in teaching and research in Bangladesh. In addition, 87.2% of teachers and 60.9% of students of the research area opined that Kaizen is the exact method and procedure (*Mean 4.07*) to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh. There are three types of regulatory bodies for HEIs in Bangladesh. Who will be the implementing agency of the Kaizen philosophy in HEIs in Bangladesh? In this respect, 90.9% of teachers and 61% of students of the research area opined that the MoE can establish an independent Kaizen department (*Mean 4.06*) for quality assurance in teaching and research in higher education in Bangladesh. It is mentionable that the MoE is currently successfully operating SDG unit to achieve SDG goal 4 by 2030. UGC of Bangladesh is one of the apex bodies for HEIs in Bangladesh. UGC is trying to achieve quality assurance in teaching and research in HEIs in Bangladesh by implementing an accreditation council. But, it has totally failed to achieve any major quality assurance targets. In this regard, 90.2% of teachers and 60.8% of students of the research area opined that Kaizen philosophy can be an alternative and the best approach (*Mean 4.04*) compared to the accreditation council implemented by the UGC in Bangladesh. From this analysis, it is very clear that the Kaizen philosophy under the MoE can be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh. Moreover, policy- makers and academicians also opined that the Kaizen philosophy is applicable to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh. More than 70% of policy- makers pointed out that higher education institution authority should implement a new philosophy like the Kaizen philosophy to overcome existing challenges in higher education in Bangladesh.

Procedure of Implementing Kaizen in Higher Educational Institutions in Bangladesh

There are many of us whom we see each day before our eyes. We go around and check out to assist them in

trying to do their jobs more effectively, efficiently, and more simply. But again and again, might be the best and therefore the best to ask them directly what should be done differently. It is often said that sometimes the sole difference between good and bad organizations is their people. And it is often forgotten by themselves. Even common regular employees like janitors, office clerks, and waiters or maintenance workers have huge resources of ideas. The whole process should be implemented in several stages and considering various factors in educational activity institutions in Bangladesh. As higher education institutions have stakeholders of various levels and

Figure 3 Flowchart showing the Implementation Process of Kaizen Philosophy



Source: Author’s own Kaizen implementation framework

positions, so there should be well-defined processes for each level. This is because stakeholders from different stages do not seem to be homogenous in Bangladesh. Stakeholders from each position or level

differ in age, experience, responsibility, activity, expectation, and participation. Keeping these in mind, the steps within the implementation process should be taken into consideration strategically. When we want to improve quality or performance, we have to search out problems, challenges, waste, or from the opposite point of view, which is opportunity. One excellent systematic tool and the most famous method for locating opportunities is value stream mapping (VSM). VSM could be a special style of flow chart that uses symbols referred to as “the language of Lean” to depict and improve the flow of inventory and knowledge management. This is a tool to improve a process by identifying added value and eliminating waste during the work process. During VSM all processes and flows are analyzed. The result from VSM is ready to value stream map, within which all important information like processes and their initiators, academic calendar, semester or year, presently operations processes, execution, adaptation, and evolution time are included. Also, there are drawn all material and data flows with their details. So, it is supported by this map we have along with the entire current status with all pluses and minuses. There we can see our opportunities to implement Kaizen in educational institutions. In addition, we have got to research student requirements, and judging times, and this information is put together and make a review of this value stream map. That leads to a future value stream map (HM 2017).

Differences between current and future states are our opportunities for improvement and achieving customer satisfaction. This famous VSM activity should be frequent with some regularity (for example once per year or semester). Now talking about the method of implementing a regular predetermined cycle is predicted to be maintained. In the 1986's, Mr. W. Edwards Deming proposed that operative processes should be analyzed and measured to spot sources of variations that cause product or service deviations from customer requirements. Mr. Deming created the diagram of a continuous process, commonly referred to as Deming or PDCA (Plan-Do -Check -Act) circle. (Figure 3) is formed to support the practice of the PDCA cycle, and recommendations from policy-makers, faculty members, and students (HM 2017). Research objectives, research questions with rationality of this research been discussed in the introductory chapter. This study has been conducted following the approaches of qualitative research methodology converting into quantitative analysis which was discussed in the research methodology chapter. There has been some statistical data presentation and analysis to answer the research questions. The whole study has revolved around two research questions. The success or failure of the research depends on to what extent those research questions have been answered by the narrative analysis of the qualitative and quantitative findings. Since it is both qualitative and quantitative in approach, the researcher has adopted several qualitative and quantitative research tools: interviews and case studies to answer the two research questions. All interviews have been recorded and then transcribed. In this study, the target group was the policymakers, faculty members, and students. Their opinions have been collected by sending questionnaires, but to validate and crosscheck those opinions, the policymakers of the concerned organizations have also been interviewed. Their comments, suggestions, and recommendations also helped to find a framework (Figure 3 and Table 8) that validates the data and the study.

CONCLUSION AND RECOMMENDATION

Conclusion

QA in teaching and research in higher education is one of the much-debated issues in Bangladesh nowadays. This study has successfully identified the main challenges and prerequisites or key elements of quality assurance in teaching and research in higher education in Bangladesh. From the discussion, it is very clear that insufficient facilities, underqualified faculty members, and poor-quality research are the major challenges to quality assurance in teaching and research in higher education in Bangladesh. Some key elements have been influencing the quality of teaching and research in higher education in Bangladesh. Those elements are modern teaching aids, library facilities, availability of books and journals in the library, laboratory facilities, research facilities, and quality of course curricula. It is also observed that insufficient

budgetary provision, corruption, politics for the key elements have been affecting the quality assurance in higher education in Bangladesh. Bangladesh as a developing and lower-middle-income country needs to develop and ensure minimum facilities for quality assurance in higher education in teaching and research in all the public and private universities without discrimination. Quality higher education should not be a slogan only, in Bangladesh. Ensuring quality assurance in higher education is not rocket science. QA is a destination but not an endpoint. It must be internally driven rather than an obligation. It is the responsibility of everybody in Bangladesh. QA should be an important part of the overall policy management. Instruments are also important, but the right attitude is much more important. However, it should be the commitments and willingness of the government and all concerned. If Bangladesh could successfully identify the existing challenges of quality assurance in teaching and research in higher education and ensure necessary facilities for the same through budgetary provision, it could provide world-class higher education and it could be an example to the whole world like the GDP growth rate of Bangladesh.

The implementation of Kaizen as an innovation to improve the quality of higher education in the fourth industrial revolution era is a priority from the perspective of Bangladeshi higher education. Efforts to improve the quality of these are carried out in continuous improvement and are a strategic step in meeting students, teachers, and policy-makers needs and desires. The implementation of the Kaizen philosophy with the zero-defect principle is emphasized in this regard. Considering that quality assurance is absolute and relative, so its existence needs to be improved continuously and continuously. Kaizen philosophy is a strategic framework for efforts to improve the quality assurance in higher education services and the quality of graduates or products aimed at customer satisfaction. The orientation of proposed model development as a strategic effort in the process of improving the quality of education, emphasizes continuous process improvement. The tools are practical and task-oriented in guiding each team to keep thinking about finding the main cause of a problem. In the Kaizen implementation process, it is used to identify the factors that cause the problem and identify the factors that are related to the problem, look for the root of the problem, and find solutions to overcome it. The factors that become obstacles and support for their existence are viewed from an internal perspective, and alternative ways are sought to minimize the inhibiting factors and efforts to empower supporting factors as a concrete form of improving the quality of higher education.

The notion of Kaizen philosophy, which focuses on continuous, steady development as opposed to making key changes, provides a complete foundation for pulling together the key concepts of strategic planning and assessment. Assessment of student learning and capacity development, as an example, seems to be most effective when faculty, students, administrators, and staff work together to diagnose and develop all facets of the learning and capacity development procedure. Such information gathered in a continuous assessment procedure can and should be used in strategic planning at the department and institutional levels. Regular modifications should occur in the content and structure of curriculum development as well as within the courses and syllabus themselves. Certainly, collaborations with other academic and administrative units have to be addressed due to their impact on the department's students; teamwork with those both inside and outside of the department is essential for quality assurance. Slowly and gradually the institutional culture evolves into yet another, sensitive to raised ways to maximize student learning. Nonetheless, leadership is a prerequisite to pull it all together into a rational whole. This paper proposes a task-oriented process for implementing the Kaizen philosophy aiming at increased efficiency and quality assurance in higher education delivered by HEIs in Bangladesh.

Recommendations

While there is no debate about whether we should formulate a new philosophy in teaching and research in Bangladeshi HEIs, sophisticated and innovative Kaizen philosophy in teaching approaches and quality research in higher education will improve quality assurance in the fast-changing education industry in Bangladesh. In this study, the author has tried to find out teaching and research variables for implementing

the Kaizen philosophy in HEIs in Bangladesh. Hence, Bangladesh does not have enough funds for investment in HEIs. Bangladesh should take proper steps for quality assurance in higher education in Bangladesh that include the gradual implementation of the kaizen philosophy with the zero-defect principle, implementation of kaizen in teaching and research, strategies to develop teaching and research skills, setting up a world-class flagship university, create linkages with higher education institutions abroad, implement unified curriculum development, initiatives required for evaluation and monitoring system, corruption and politics free HEIs for quality teaching and research, strategies to improve research skills, research facilities, setting up a national research council and central research laboratory, increasing funding for research, establish teaching-research universities, and increase incentive for research. Research activities should be rewarded for providing desired results. Potential rewards in research should include money, promotion, new responsibilities, and status. Other support may include additional budget, seed grants, venture capital, funded research chairs, fellowship programs, conference travel, international publication support, short-term releases, and other facilities.

HE in Bangladesh needs to be redefined in terms of need, relevance, mission, quality, direction, and delivery. There should be a vision that defines and drives our efforts towards achieving these objectives which aim at a global level of competitiveness and quality. It will be synchronized with the aspirations of the National Education Policy 2010, and the SDGs, and the goals of Bangladesh’s achieving a developed country by 2041 by implementing a recommendation framework (Table 8).

Table 8 Recommendation Framework

SL No.	Actions to be implemented phase-wise	Implementing Organisations /Agencies	Implementation Phase		
			Phase 1 2023-2025 Short-Term	Phase 2 2026-2030 Medium Term	Phase 3 2031-2040 Long Term
1.	Gradual Implementation of Kaizen Philosophy with the zero-defect principle	SHED, MoE, HEIs	√	√	√
2.	Kaizen in Teaching and Research	HEIs	√	√	√
3.	Strategies to develop teaching and research skills	SHED, MoE	√		
4.	Setting up a world-class flagship university	SHED, MoE	√	√	
5.	Linkages with HEIs abroad	SHED, MoE, HEIs	√	√	
6.	Unified curriculum development	UGC	√		
7.	Financial transparency of university units	HEIs, UGC	√	√	√

8.	Initiatives Required for Evaluation and Monitoring System	SHED, MoE, UGC	√		
9.	Corruption and Politics free HEIs for quality teaching and research	SHED, MoE, UGC, HEIs	√	√	
10.	Short- and long-term teaching strategies	HEIs, UGC	√	√	√
11.	Recruitment of quality faculty with experience	HEIs	√	Ö	Ö
12.	Appointment of International Qualified Teachers	SHED, MoE, UGC, HEIs	√	√	
13.	Enhancing quality of teaching staff	HEIs	√	√	
14.	Training for enhancing the quality of teaching staff	UGC, HEIs	√	Ö	
15.	Multi-factor model of teaching quality	UGC, HEIs	√	√	√
16.	Strategies to improve research skills	SHED, MoE, UGC	√		
17.	Research Facilities	SHED, MoE, UGC, HEIs	√	√	√
18.	Setting up a National Research Council (NRC) and Central Research Laboratory	SHED, MoE, UGC	√	√	
19.	Increasing funding for research	SHED, MoE, UGC, HEIs	√	√	√
20.	Teaching-research universities	SHED, MoE, UGC	√	√	
21.	Incentive for research	SHED, MoE, UGC, HEIs	√	√	√
22.	Increasing the share of Higher Education in the National budget to 6% by 2030	SHED, MoE	√	√	

This research work is just a small effort to meet the current needs of time and evolution in higher education in Bangladesh and its students, faculty members, and administrators' psychology. There will always be a

huge ground open for further research which is very much required in the respective field to cover the limitations of implementing the Kaizen philosophy and chances in this study or research work. The biggest problem is the lack of enough previous research work related to the field and the problem itself. There was a lack of required knowledge to conduct the research up to a more professional form. No specific mathematical modeling and advanced statistical tools have been used which keeps the door open for further in-depth research. Furthermore, some more time would have been helpful for the research to be more efficient and specific about the real findings.

From the literature review and data analysis, the author can conclude that there is a great deal of literature available on Kaizen philosophy in HEIs, which gives a broad view of past practices and research carried out across the world. Though Kaizen is a widely accepted philosophy in manufacturing industries and also more research work is required in this field, the author feels that Kaizen philosophy can also be applicable in HEIs in Bangladesh supported by previous studies and data analysis. Thus, a great scope of research is available for new researchers in this field. So, more research is necessary could improve the application aspects, as these factors are highly imperative for the success of the Kaizen philosophy in most of the HEIs across the world.

Furthermore, challenges and quality assurance in teaching and research in HEIs in Bangladesh have a different meaning from the general perception which warrants in-depth study in the future. This study has been undertaken at the micro-level of implementation of the Kaizen philosophy in teaching and research in Bangladeshi HEIs. Hence, this study cannot comment on the macro-level like overall challenges and quality assurance in HEIs in Bangladesh. The author does not know whether and to what extent this micro-level Kaizen implementation in quality assurance in teaching and research in HEIs moves upward to the national level in Bangladesh. No empirical study has yet been done on the implementation of the Kaizen philosophy for ensuring quality assurance in teaching and research in HEIs in Bangladesh. Future researchers like academicians and policy-makers can also look into the output and outcome of implementing the Kaizen philosophy in HEIs in Bangladesh.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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APPENDICES

Appendix-A

Survey Questionnaire-1: Questionnaire for faculty members and students

SA= Strongly Agree A= Agree U= Undecided D= Disagree SD= Strongly Disagree

What is your gender?

Male

Female

Name of your affiliated/enrolled University?

Dhaka University

National University

BUET

Private University

Sl No	Questions	Strongly disagree=1	Disagree=2	Neutral=3	Agree=4	Strongly Agree=5
1.	Higher education institution authority should implement a new philosophy to overcome existing challenges in higher education in Bangladesh					
2.	Higher education institution authorities should implement the Kaizen philosophy for quality assurance in Bangladesh					
3.	Kaizen is the exact method and procedure to overcome the challenges of quality assurance in higher education in Bangladesh					
4.	Ministry of Education can establish a Kaizen department for quality assurance in higher education in Bangladesh					
5.	Kaizen philosophy can be an alternative and the best approach compared to the accreditation council implemented by the UGC in Bangladesh					

6. What are the exact methods and procedures that will be focused on by the authority to overcome the

challenges of quality assurance in teaching and research in higher education in Bangladesh?

Ans:

7. Is Kaizen's philosophy applicable to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh?

Ans:

8. What are your specific suggestions or recommendations regarding the implementation of the Kaizen philosophy?

Ans:

Appendix-B

Survey Questionnaire-2: Questionnaire for policy-makers and education experts

Consultation Questionnaire

1. What are the exact methods and procedures that will be focused on by the authority to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh?

Ans:

2. "Higher education institution authority should implement a new philosophy to overcome existing challenges in teaching and research in higher education in Bangladesh"- Do you agree or not? Explain

Ans:

3. Is Kaizen's philosophy applicable to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh?

Ans:

4. Higher education institution authority should implement the Kaizen philosophy for quality assurance in teaching and research in Bangladesh

Ans:

5. How will Kaizen's philosophy apply to overcome the challenges of quality assurance in teaching and research in higher education in Bangladesh?

Ans:

6. Can the Ministry of Education establish a Kaizen department for quality assurance in teaching and research in higher education in Bangladesh?

Ans:

7. Can Kaizen philosophy be an alternative and the best approach compared to the accreditation council implemented by the University Grants Commission in Bangladesh

Ans:

8. Will the implementation of the Kaizen philosophy for quality assurance in teaching and research in higher education policies allow the gaps of all previous weak policies?

Ans:

9. What are your specific suggestions or recommendations regarding the implementation or framework of the Kaizen philosophy?

Ans: