

# Introducing Total Quality Management Pillars in Higher Education Through Implementing 5c Self-Assessment Model

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**Abstract:** *Total Quality Management (TQM) in Higher Education has played a critical role in improving quality of education continuously. Plenty of models and standards are designed and proposed by quality gurus and international standardization organizations for education sector solely. One of them is John Jay Bonstingl's 4 Pillars in education which are: synergistic relation, self-assessment and continuous improvement, ongoing process and leadership. The 4 Pillars are the main focus of my research. Through the research, quality management approaches and principles in higher education have been investigated, and self-assessment experiences of international universities have been studied. Through the article, I will introduce 5C (cognizing, comparing, correcting, continuing and conducting) self-assessment model which I have proposed and applied in my teaching. The model is based on quality principles, notions of TQM and John Jay Bonstingl 4 Pillars. Benefits and challenges which I have faced with my students and further recommendations will be introduced in the article.*

**Keywords:** *Total Quality Management in Higher education, self-assessment,*

## 1. Introduction

Total Quality Management is explained and interpreted in different ways. Some see the term Total Quality Management (TQM) is an approach while others explain it as an activity or a management philosophy which aims at improving quality of service and product of an organization. Even though TQM was originally developed for improving industrialization after Second World War by Edward Deming, it was started to be implemented and applied in many sectors including education. Why TQM in education? Variety of reasons which explain the application of TQM in higher education have existed. In a globalized environment of higher education, the concept of Total quality management (TQM) has assumed critical importance as it is the only means by which the entire value chain of higher education can be improved further and integrated with the global requirements. Therefore, TQM as a quality management process has made inroads into higher education institutions (HEIs) in many developed countries. (Ganguly, 2015). Many educators believe that it provides guiding principles for needed educational reform. (Ifitkhaar Ahmad Wani, 2014). But I strongly believe that, TQM is not for only improving quality of education and addressing issues which are related to the academic activities but also it is for building and maintaining high morality, ethic and positive attitude in academic setting through implementing and applying its principles, approaches, and models since education is considered set of academic knowledge, high ethics, skills, beliefs, and values. Plenty of models, approaches, and principles which can be applied and proposed solely for education are developed by scholars in a segment of the education process. Some of them emphasize on educational institutions' management, some are for teacher and students' continuous improvements while others focus on input-process-output of education. For instance: Excellence Model by Pires da Rosa in 2003, Portugal, Academic Award Model by Badri & Abdulla in 2004, UAE,

Quality Management Framework by Grand, et al in 2004, USA, 5 Phase TQM Implementation Model by Motwani & Kumar in 1997, USA, Balanced Scorecard, SERVQUAL so on. (Maureen Brookes, 2007).

## **2. Total Quality Management and its approaches and principles**

Total quality management is an approach, philosophy or concept that aims to improve the quality of service and products of the organization. Wither (1990) defines the term by breaking the phrase into three parts whereby 'total' implies every person that is involved, 'quality' means customer requirements are met exactly and 'management' implies executives are committed, (Iftikhaar Ahmad Wani, 2014). Oakland has defined Total Quality Management (TQM) is an approach to improving the effectiveness and flexibility of business as a whole. It is essentially a way of organizing and involving the whole organization; every department, every activity, every single person at every level. Total Quality Management (TQM) describes two main notions: 1. Continuous improvement, and 2. The tools and techniques or methods used to improve continuously. In addition, TQM emphasizes on eight principles which are 1. Customer-focused, 2. Total employee involvement, 3. Process-centered, 4. Integrated system, 5. A strategic and systematic approach, 6. Continual improvement, 7. Fact-based decision making and 8. Communications. (ASQ, 2018).

## **3. Quality management approaches and principles in higher education**

The final product is the measurement of the quality of business and other sectors. But how can we measure education quality? By its students and teachers or by the graduates? Scholars and researchers have proposed their ideas for evaluating education quality, with many scholars believing that education quality can be measured based on students and graduates in terms of one of the quality principles- customer focus. Others state that education quality can be evaluated by how educational institutions operate and manage its day-to-day activities and main activities towards strategic goals. Still, others think that the quality of the education can be assessed by several factors such as school, curriculum, teachers, how well parents care for their children, external and internal factors of educational institutions, or the overall process of converting the input to valuable output. This is still arguably and conflicted and yet we couldn't find an absolute answer that everyone can agree on. Many scholars believe that Total Quality Management in Higher Education is known as new way of life in universities or colleges. Total quality management (TQM) is applied to education in order to improve quality and to satisfy its customers and like the other industries- it has input, process, and output. Educators, researchers, educational institutions have proposed the use of TQM approaches, principles, and models to improving the quality of service in education.

## **4. John Jay Bonstingl 4 Pillars Of Total Quality Management**

### **4.1. Principle 1: Synergistic Relationships**

The very first pillar of TQM to education emphasizes "the synergistic relationship between the "suppliers" and "customers ".(John Jay Bonstingl). (<http://www.jaybonstingl.com>, 1-51). Students and teacher together produce a product which can lead improvement for students. Teachers and educational institutions provide or supply an environment where students can gain a knowledge and develop their skills and abilities. Students, they are considered as workers who are responsible for their own quality of the work.

### **4.2. Principle 2: Continuous Improvement and Self Evaluation**

According to Deming, no human being should ever evaluate another human being. The second pillar is the continuous improvement and self-evaluation. Implementing self-evaluation can lead students to improve continuously. In other words, recognizing one's own strengths and weaknesses make further purposes clear in learning process also it helps to find out and correct mistakes of learning.

### 4.3. Principle 3: A System of Ongoing Process

The principle is more about management. Students and teachers should not be blamed for system failure. Failures and errors of an ongoing system should be detected and eliminated to improve the quality.

### 4.4. Principle 4: Leadership

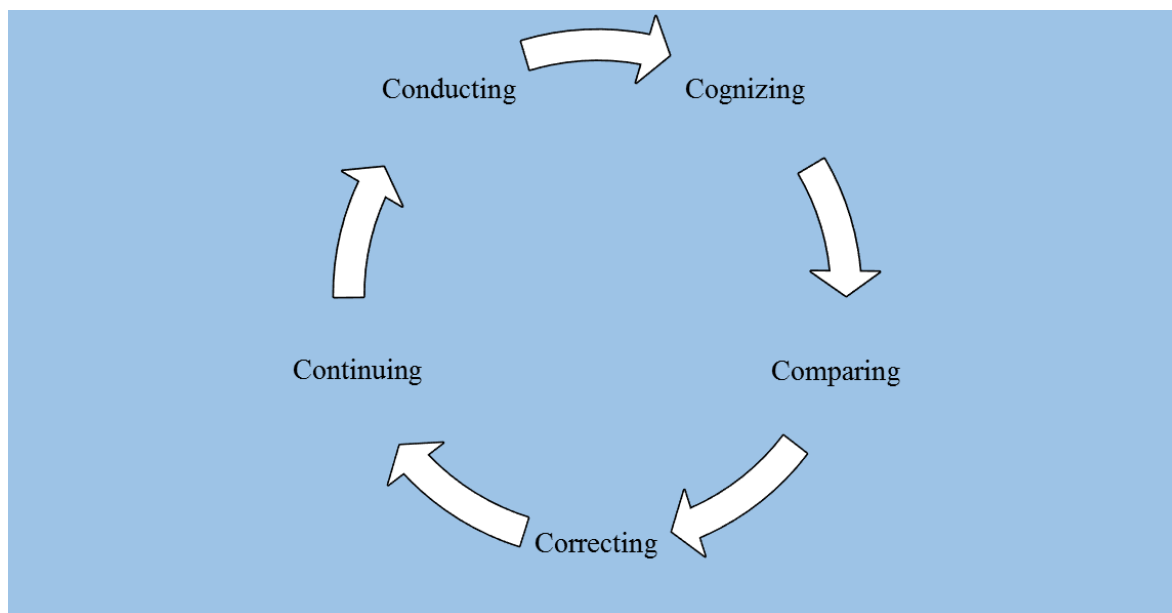
The fourth TQM Principle applied to education is that the success of TQM is the responsibility of top management. Teachers should build the environment where learners can do their best.

## 5. Self-assessment experiences of international universities

Assessment is closely associated with student learning. (Arter, 1997; Dochy&McDowell, 1997; Dochy, Segers, &Sluijsmans, 1999). In higher education, self-assessment is introduced and contributes to student-centered learning. Self-assessment involves students in making judgments and reflection on their learning (Boud & Falchikov, 1989). (Siow, 2015) Self-assessment is about students developing their learning skills. It is not primarily about individuals giving themselves marks or grades. And it is not about supplanting the role of teachers”.Boud (1995; p 17) (Wride, 2017). Around the world, hundreds of universities offer their service to students. Many of them have already implemented self-assessment and achieved a certain amount of result. Benefits associated with the self-assessment are numerous. By studying deeply about self-assessment, we, universities almost do have same challenges and barriers when we start to implement self-assessment. For instance: Some students believe that they have lack of skill and self-confidence to assess their performance and some students are reluctant to assess themselves since they have an identity for teachers in their eyes as a teacher or assessor or teacher's responsibility. Additionally, some students have a fear to assess their works wrong and feel uncomfortable with the responsibility. Another one of the biggest barriers is students do not fully understand and see benefits of self-assessment. Poor performance can be assessed too high is also one big challenge. Because some students tend to overestimate their work and be rewarded with high marks easily. In one word, students “play” with the self-assessment

## 6. Self-assessment 5C model

Regarding challenges and barriers to implementing self-assessment, based on TQM notions which are continuous improvement and tools to be used and John Jay Bonstingl 4 pillars of education, I have proposed my own self-assessment model which is named 5C. Through the model, the challenges and problems of implementation of self-assessment can be solved. Activities of the 5C model are explained as follows:



### **6.1. Cognizing**

In this phase, teachers need to provide students with knowledge on self-assessment.

Teachers need to explain followings: What is self-assessment? What are the benefits of self-assessment, what will students achieve after the implementation of self-assessment, and the progress they will have at the end of the self-assessment implementation.

Cognizing-

Action verbs for cognizing phase: *understand, remember, cognize, discuss, ask, explain, describe, and realize*

### **6.2. Comparing**

In comparing, both teacher and student use same rubrics to assess student's work. Each rubric must have a blank space where both teacher and student write their comments on student's work. In other words, teacher assesses student's work and provides feedback on student's performance and student assesses his or her own work and writes comments on his or her own performance.

Comparing-

Action verbs for cognizing phase: *provide, assess, compare, talk, and average*

### **6.3. Correcting**

In correcting phase, students are given the second chance to upgrade their marks. In order to upgrade their marks, students should resubmit their assignments after correcting their mistakes, improving their performances based on teacher's feedback and student's own comments which were written on the rubrics. Assignments should be returned to students. Student also should tell a teacher how he or she has corrected mistakes and what he or she has done to improve his or her performance.

Correcting-

Action verbs for correcting phase: *apply, improve, discuss, upgrade, practice, prepare, re-create, and resubmit*

### **6.4. Continuing**

In this phase, actions of previous 3 phases are repeated.

Continuing-

Action verbs for continuing: *all above verbs*

### **6.5. Conducting**

The final phase of the 5C model is conducting self-assessment. If students complete all previous actions successfully, students can be considered as ready to assess his or herself objectively.

Conducting -

Action verbs for conducting phase: *read, assess, write, provide*

## **7. Research findings**

The paper has served to find out possibilities to implement self-assessment in higher education in Mongolia, to define processes and steps in details to implement self-assessment systematically. In order to achieve this goal, following objectives are set.

Objective 1: To compare teacher and students assessments

Objective 2: To find out students' attitude and perception about self-assessment

Objective-3: To define what should be considered before and after the implementation of self-assessment.

## 7.1. Methodology

In this section, student survey, observation and interview are on the methodology and data analysis have been applied.

## 7.2. Sample

86 students (n=86) were involved in the survey and implementation of the 5C model. Those students who currently take English for Academic Purposes (EAP) courses study in their 1-3 years in the University of Finance and Economics, Mongolia. The EAP course students are asked to submit written and oral assignments in every 2 weeks.

## 7.3. Data Analysis

Data were analyzed using the Statistical Package for the Social Science (SPSS) version 23. Quantitative data were reported as a percentage and open questions were analyzed through the program.

## 7.4. Findings

Table I. Comparison of teacher and student assessments

	mean	N	St dev	p-value
Assessment 1				0.001
Teacher	2.0	86	.82	
Student	2.6	86	.61	
Assessment 2				0.001
Teacher	2.2	86	.70	
Student	2.5	86	.65	
Assessment 3				0.289
Teacher	2.6	86	.51	
Student	2.7	36	.33	

Table II. Comparison of teacher and student assessments /gender /

Gender		mean	N	Standard deviation	p-value	
Male	Assessment 1	Teacher	1.9324	17	.80524	.001
		Student	2.594	17	.5068	
Female	Assessment 1	Teacher	2.0316	19	.84987	0.001
		Student	2.658	19	.84987	
Male	Assessment 2	Teacher	2.012	17	.84987	0.023
		Student	2.335	17	.84987	
Female	Assessment 2	Teacher	2.311	19	.84987	0.001
		Student	2.700	19	.84987	
Male	Assessment 3	Teacher	2.56	17	.84987	0.347
		Student	2.718	17	.84987	
Female	Assessment 3	Teacher	2.71	19	.84987	0.651
		Student	2.732	19	.84987	

Students overestimated their works when they have tried self-assessment at the very first time. As practicing 3 phases regularly (cognizing, comparing and correcting) of 5C model, students are assessing themselves objectively. Results of the comparison of teacher and students are shown in table 1 and 2.

When students were asked to resubmit their assignments and upgrade their marks in the correcting phase, they were very engaged and satisfied with their marks. Correcting their mistakes frequently helps them to improve their English skills (writing and speaking) continuously.

As mentioned earlier barriers associated with self-assessments can be solved through the model. Resubmission of assignments, upgrading marks, correcting mistakes, talking with the teacher, all these activities can make students feel comfortable and responsible as well as they feel that they have control over their own evaluation. Additionally, 5C model promotes students' active engagement with learning, motivates and inspires them. Motivated, engaged and responsible students try to improve continuously their skills and knowledge.

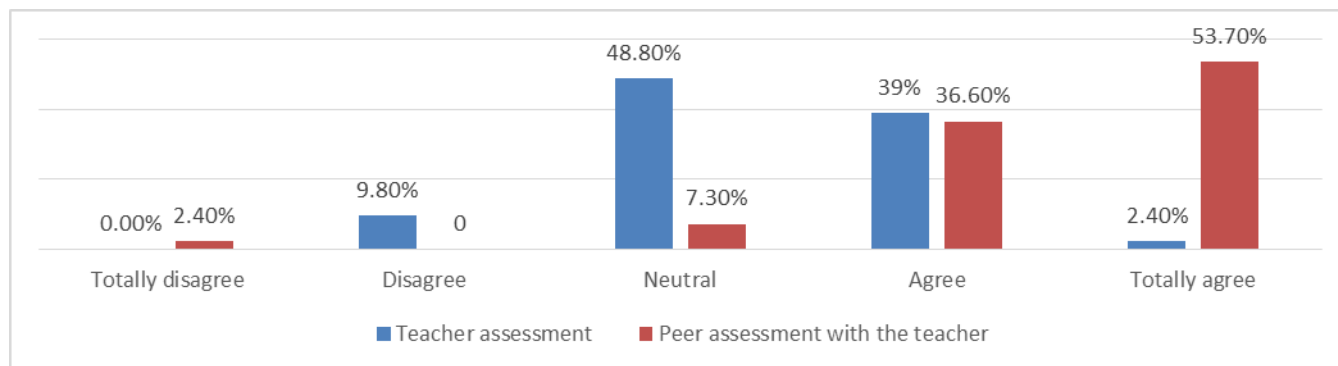
After implementation of the 5C model, students were asked to fill survey which aims to find out students' attitude towards self-assessment.

Results of the survey are shown in following charts.

### 8. Which assessment is more objective? Teacher independent assessment and peer assessment with the teacher?

As shown in the chart 1, 93.3% answered peer assessment with the teacher is more objective than teacher independent assessment which implies students were satisfied with peer assessment with the teacher.

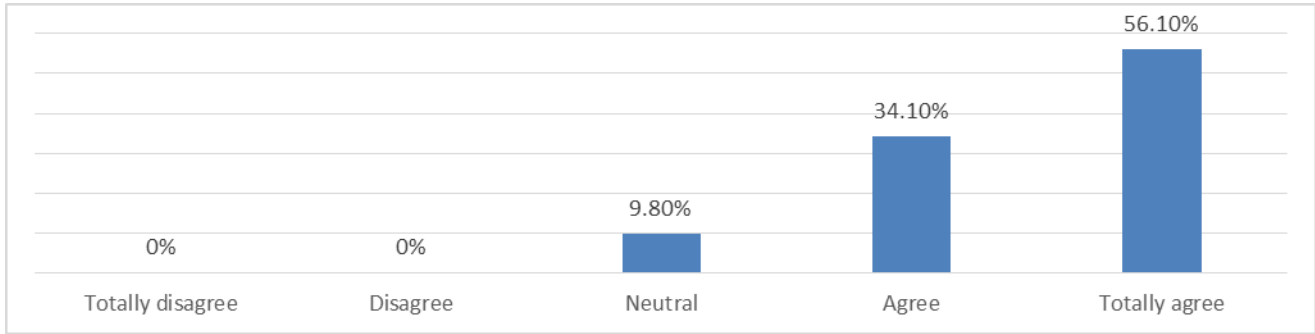
**Chart 1.**



### 9. As practicing 5C model, I am learning to assess myself and I can assess my work objectively

As shown in the chart 2, 90.2% answered that they learn to assess their work objectively which shows self-assessment of the student is improving as they evaluate themselves regularly.

**Chart 2.**



**10. *Just after the first self-assessment, I started to analyze myself and think about my further learning goals.***

All students have chosen neutral, agree and totally agree. The following table shows the percentage and correlation with students' GPA.

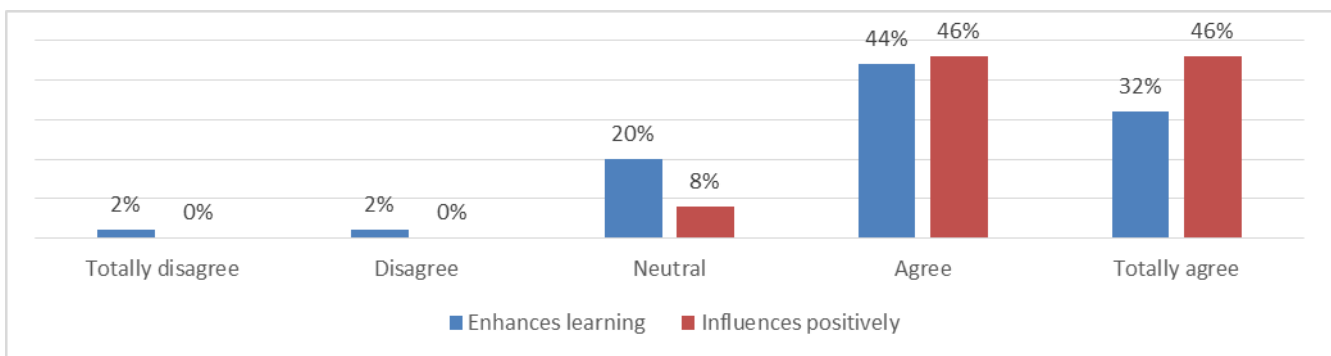
**Table III**

	GPA					Total
	0-2	2-2.5	2.5-3	3-3.5	3.5-4	
Neutral	0.0%	33.3%	5.3%	0.0%	0.0%	9.8%
Agree	0.0%	22.2%	26.3%	33.3%	0.0%	22.0%
Totally agree	100.0%	44.4%	68.4%	66.7%	100.0%	68.3%

**11. *I believe that learning to assess my own work enhances my learning and influences my manner and attitude positively towards learning.***

76% agree and totally agree that assessing their own work enhances their learning and 92% said self-assessment influences positively on their attitude and manner.

**Chart 3**



**12. Conclusion**

However implementing self-assessment cannot be considered as improving quality of education, it leads continuous quality improvement in learning and teaching. Even though there are plenty of methods and approaches to implement self-assessment, some cannot be applied in Mongolian education sector. 5C model not only can help students to learn to assess their works but also it has a positive impact on student's manner, attitude and behavior.

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