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# Applying the Philosophy of Total Quality Management to Curriculum Design and Delivery

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***Abstract*:** *Curriculum is an essential element of education required to capacitate individuals for life. To meet upcoming demands of 21st century it is necessary to apply modern management philosophy known as Total Quality Management to set guidelines for curriculum design and delivery. Therefore, the main purpose of this paper is to look at how the TQM paradigm might be used to curriculum design and delivery, particularly in higher education institutions. The main objectives of the study included views of male and females about emergent philosophy of TQM into curriculum design and delivery in Pakistan and application of TQM into curriculum design and delivery in the higher education institutions of the PakistanStratified random sampling was used to choose the study's sample.. From 5 Public-sector universities of the Pakistan 320 respondents (Vice Chancellor, Deans, Registrars, Teachers and the students) were selected as sample of the study. A self-developed questionnaire was used as a tool for collection of the data. Data were analyzed by applying t-test, one-way ANOVA and Post-hoc (LSD). The key findings of the data analysis demonstrated that the TQM paradigm did not nurture much in terms of curriculum design and delivery in Pakistan's higher education institutions.Upon findings it is recommended that doctrine of TQM should be utilized in the formulation of curriculum and implementers should be trained accordingly for its real application.*

**Key Words:** Curriculum Development, Curriculum Implementation, Curriculum Dissemination, Quality

## Introduction

It is the need of time to cope with the new era demands and education is fervent tool that means a lot in everyone's life as it facilitate personal, academic and professional learning, knowledge and skill. It grooms personality and ensures coherent learning experiences for future generations. It helps to sustain prosperity and success of the world around us. The formation of human capital cannot be accomplished without education hence for creation of unique capabilities and expertise of individuals it is necessary to construct curriculum in a way that enable individuals to meet competitive world requirements. Curriculum is a vehicle that not only transfers societal norms but also it invests in knowledge that pays best interest. Curriculum may also understand as set course of studies which school is attempting to teach individuals to enhance their social behaviors as well as thinking skills. Curriculum set goals and learning outcomes with a measurable plan for delivering quality education to students, enables their core competencies and provide them a road map for their academic success. Curriculum is purposeful and progressive process that provides directions to teachers to deliver quality education for all round development of an individual and supports in achieving the aims of education. It also promotes democratic values like fraternity, equality and liberty in the milieu of

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school and in the minds of individuals. Curriculum is planned and systematic process that brings positive improvements in the system of education as well as plays central role in the development of the society. It offers solutions of the world's pressing conditions like poverty, political instability, socio-economic situations, environment and sustainable development. As a result, curriculum should be designed and delivered in such a way that it can assist teachers, students, administrators, and community stakeholders in achieving their academic and professional objectives.

## Literature Review

Curriculum is dynamic process which helps in the development of balanced personality. In broader sense curriculum is planned and organized instructional content, materials, chain of activities and resources imparted by the trained practitioners to bring observable changes in the behaviors of the individuals and for attainment of the educational objectives (Tyler, 1949). Curriculum raise skills of analytic comprehension and practice with powerful support of school that demonstrated by the individuals successfully before advancing to the practical life (Aggarwal, 1990). Curriculum provides myriad forms of learning that shape our daily lives. Curriculum is learning activities provide by the school to master a subject (Oliva & Gordon, 2013). There are four elements of curriculum named objective: these objectives includes the general objective and the specific objective both are planned to achieve the vision and mission and the specific are for learning plans formulated by the teachers in the classrooms to modify student's behaviors and attitudes (Taba, 1962).

Content: it includes whole range of activities in which individual supposed to gain knowledge and competence. It consists of implicit and explicit knowledge; teacher and learner seek to be learned during the teaching and learning process (Grace, Kapoma & Carol, 2011). There are criterions that are vital for development of quality content suggested by the (Alvior, 2015). For him knowledge is intensely variable and personal event that enhances valuable and real-life experiences in a coherent way.

Validity, it centered on authenticity of the content. It emphasis on monitoring of the teaching and learning process. It helps in changing vain activities into constructive ones. The validity of subject matter should be assessed on a regular basis in order to assess the achievement of educational purposes, goals, and objectives.Learnability, the content should be within the schema and experiences of the individuals. Teachers should apply theories of learning for best presentation of the subjects in an organized manner to maximize the learning capacity of students. Interest, good teacher combines different effective techniques to improve learning and interested in accomplishing predefined goals. Individuals can learn best if the content is meaningful and appealing. At micro and macro level curriculum planners must set constraints for every subject and subject matter must be scrutinized for continuum of learning in modern society (Haider and Ghulam, 2016).

After objectives, and selection of proper content there comes learning experiences which deliberated as blue prints of education (Oliver and Hyun, 2011). Learning experiences are rational functional skills that school enhances through wide and better instructional strategies and methods in order to development of the sound body and mind. Last phase is evaluation it involves periodic review and assessment of implementation process of curriculum for elimination of obstacles. Curriculum evaluation determines value, effectiveness and quality of the curriculum (Print, 1993). It is an essential process of the curriculum to determine educational objectives in terms of instruction and educational outcomes. It is an integral part of curriculum (Oliver, 2005) which involves consultation of key figures (teachers, students and all other stakeholders) to explore issues of execution of curriculum and amalgamation of new trends into it. There are four types of curriculum evaluation suggested by the (Guba and Stufflebeam, 1970):

- The first one is Planning intent; that is selecting the suitable objectives.
- The second is Planning Process; that is selecting the techniques and methods.
- The third type is Implementation Process; the process monitors continuity during change and transformation.
- Key outcomes i.e. achievement of the national, institutional, departmental, subject objectives be achieved.

## Curriculum Design

Curriculum is planned series of intellectual activities aligning and arranging studies for smooth learning of the students and/ readers. (Biggs, 2003), (Oliva, 2005). Subject-centered curriculum, Learner-centered curriculum, and Problem-centered curriculum are the three types of curriculum designs. The discipline or subject-matter was the focus of subject-centered curriculum design. This design concentrates on what has to be learned, how it should be learned, and how it should be taught. Learner-centered curriculum considers each student's desires, interests, and objectives.It acknowledges students interests and empower learners to shape or choose their learning activities. This curriculum design enhances students level of learning and help them to stay engaged in the learning experiences that they are learning. Problem- centered curriculum is alike learner-centered curriculum as it also focuses on teaching students to make them creative and innovative. In this design students are exposed to real-life situations which helps them to come up with a solution to the problem that are transferable to the real world (Aggarwal, 1990).

**Table 1.** Components of Curriculum Design

| Components | Brief Description | Example Questions |
|---|---|---|
| Aims | Overall goals of a program | What plans are effective and achievable? Do program goals fulfills future needs of the national, institutional, departmental and subject needs? |
| Objectives | Wide range of content and learning experiences | Are students able to grasp academic/professional skills as a result of programme goals? |
| Learning Outcomes | Covers what students will do at the end of the program. Teacher will come to know through formative/summative evaluation | Is there a link between learning outcomes and evaluation methods? How clear is the knowledge or guidance about learning outcomes provided to students? |
| Academic and competence standards | Professional standards set by (on behalf of) specialists or accrediting bodies | What kind of or level of guidance is there about professional standards? Do educational providers ensure about professional standards and their results? |
| Syllabus | Comprises subject-matter | Do the planners take in to account the views of the participants and/ stakeholders for enclosure of life experiences and educational experiences to develop mutual respect for individual differences? |
| Teaching methods | Included activities by those who will teach the learners online or face to face. | Are teaching methods/techniques suitable and support/ provide diverse learning experiences? |
| Activities for learning | Contain drills that are helpful for students and designed by keeping in view individual differences | How students get encourages working in individually or in groups outside the class? |
| Assessment and Feedback | Consisted of different types of evaluations carried by the curriculum experts or specialists | What methods are used for program assessments? What standardized criterion be used? And what |

| | | |
|---|---|---|
| | | benchmarks are shared with the colleagues and the instructors to have a feedback? |
| Teaching and learning | All the resources which are used to deliver the content | Make sure whether these sources are accessible for the students to learn? Do the resources used for delivery of the subject-matter is appropriate and suitable? |

*Source: (Morgan and Houghton, 2011)*

## Curriculum Delivery

Curriculum comprises of continuous series of activities required to translate educational aims, goals and objectives into concrete activities, materials to bring observable change in behavior. It is an important key of an educational system. It helps teachers to plan educational experiences coherently as a teacher going into classrooms must know what to teach, how to teach. If teacher not knowing what to teach and how to teach it will disaster her teaching learning goals and at the end students wouldn't have learnt anything due to lack of appropriate planning. A clear reference monitoring needed across the year to inspect curriculum functionality and relevance to its needs. Hence, evidence-based teaching learning practices should be included, and assessment and reporting procedures must be aligned with reference to the approved curriculum.

## Elements of Curriculum Delivery

| Component | Description |
|---|---|
| Content Skills | Content presentation skills to be taught and assessed across the years of school in context of what (and when) teachers should teach and students should learn |
| Constructing learning experiences | learning experiences should be reachable, engaging and challenging, responsive to needs of all students |
| Instructional Arrangements | A strong emphasis on the provision of curricular skills and attributes (critical and creative thinking, ethical behaviour, personal and social capability, information and communication technology competence, literacy, and intercultural understanding) in order to proficient students in the basics as well as key learning areas |
| Class/Instructional Management Procedures | The classroom and the instructors their management that consist of their address highlighting both academics and their behaviors. |
| Progress Assessment | Formative and summative evaluation, a monitoring process designed to clarify learning intents. |

*Elements of Curriculum Implementation, Source: (Hoover and Patton, 2008),*

## Application of Total Quality Management into Curriculum

About the development of curriculum, instructional design/arrangement, content skills as well as plans about instructional management, there is no direct concept given in the literature of Total Quality Management. Various researchers have lately researched the rise of total quality into curriculum. For example, (Herbert, Dellana, and Bass, 1995) studied the phenomena and their focal portion was TQ involvement into curriculum as their research reveals, done in an American business school. They worked on TQM, a multi-dimensional concept with several quality characteristics that is required to achieve quality in the educational industry.

The air force academy of America had experienced TQM in history of TQM for the first time in the history. The attempts were made to merge TQM's principles into curriculum development in the year 1990. The academy's cadet had taken a core course having thermodynamics. Bruce, Ferrin,

Landeros and Reck, 2001) have done another study regarding the inclusion of TQM into curriculum. (Hebert *et al.* 1995) suggested four areas of TQM they are as follow:

- The functions of the University and the administration should be improved.
- TQM should be integrated into curriculum
- The application of TQM into classroom methods and technology while instructing
- The TQM to manage and control the university research activities.

Bruce, *et al.*2001 has cited (Divoky and Taylor, 1996), (Kleindorfor, 1994), and (Fisher and Koch1998), according to him all the cited researchers are in the favor integration of TQM into curriculum. They suggest to involve the entire faculty the students to be involved to have TQM effectively applied in academia while facilitating interaction between organization and the students for better understanding and evolution.

(Aytac and Deniz, 2005) looking at the progress rate an effectiveness the higher education organization should apply the TQM in the academia for better planning and implementation of the curriculum. The studies should fulfill the stakeholders demands as well as the studies content must incorporate the skills and abilities needed to be according to global standards. Deliverance and content design must be product oriented and supportive for course learning outcome.The programs instructors have to play an vital role in order to execute the program timely and evaluate it while providing proper guidance to meet the TQM standards as the same time assuring quality maintenance.

## Objectives of the Study

- To study curriculum design and delivery as distinguish factor of TQM in Pakistan.
- To examine opinions of gender about emergent philosophy of TQM into curriculum design and delivery in Pakistan
- To study differences among universities about emergence of TQM philosophy into curriculum design and delivery in the higher education institutions of the Pakistan

## Research Hypothesis

**H0 1:** In higher education institutions, there is no significant difference in male and female opinions about the characteristic TQM operative factor Curriculum design and delivery.

**H0 2:** On the TQM operative factor Curriculum design and delivery in higher education institutions, there is no significant variation across different sample groups (VCs, Deans, Registrars, Teaching Faculty, and students).

## Research Methodology

### Population

The population of the study included all public-sector higher education institutions, all top administrators, all professors, and all students. The website of Pakistan's Higher Education Commission (HEC) provided a list of all higher education institutions in the country.

## Sample

There are 74 public-sector higher education institutions situated in the Pakistan. From 74 public-sector higher education institutions, 10 higher education institutions, 10 vice chancellors (VC’s), 10

registrars and 10 deans, 70 teachers and 220 students were involved for the study. All of them were chosen through stratified random sampling technique.

## Research Instrument

Research tool was created for collection of the data from the selected respondents. Five-point scale (SA= strongly agree, A= agree, U=Uncertain, D=disagree and SD=strongly disagree) was chosen for research tool. Tool was distributed to vice-chancellors, registrars, deans, teachers and the students at 10 public-sector Pakistani higher education institutions. Research tool was administered for pilot test in the higher education institutions of Lahore. Research tool was distributed to 50 respondents to get their opinions by the researchers personally. The research tool included total 35 items. Reliability and validity of the instrument was also ensured through panel of experts and various statistical techniques. After piloted the instrument feeble items having low correlation were eliminated. Cronbach's alpha coefficient was used to measure scale and inner reliability of the items. It was found .89 reliability score of the final research tool. Final research tool had 30 items.

The data is analyzed through SPSS 21 and presented in the tables below.

## Result and Analysis

**H0 1:** There is no significance difference in the opinion of male and female about distinctive TQM operative factor Curriculum design and delivery at University level.

**Table 1.** Score of Mean and the t Value on the Score of Curriculum Design and Delivery of Male and Female

| Respondents | N | Mean | S.D | t-value | Df | p-value |
|---|---|---|---|---|---|---|
| Male | 156 | 53.66 | 5.708 | 1.381 | 318 | 0.167 |
| Female | 164 | 55.21 | 5.811 | | | |

**Significant t-value at 0.05*

The table shows the mean difference in TQM scores for male and female TQM operative factors curriculum design and delivery. Males have a mean of 53.66 and females have a mean of 55.21, with a mean difference of 0.47. T has a value of 1.381, which is not statistically significant at the 0.05 level of significance. The null hypothesis is accepted, which indicates that there is no significant difference in male and female opinions about distinctive TQM operative factor curriculum design and delivery at the university level.

**H0 2:** There is no significant difference among different sample groups (VCs, Deans, Registrars, Teaching Faculty and students) on TQM operative factors Curriculum design and delivery at University level.

**Table 2.** Different Ample Groups (VCs, Deans, Registrars, Teaching Faculty and Students) are Analyzed on Curriculum Design

| Sources of variation | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 159.705 | 3 | 29.926 | | |
| Within Groups | 36481.951 | 318 | 33.774 | 1.179 | .317 |
| Total | 36441.666 | 319 | | | |

**Significant level $p \leq 0.05$*

1.179 in the table is the F-value that is regarding the effect of sample groups on TQM operative factor curriculum design. The delivery score is not significant at $p \leq 0.05$ level of significance so the null hypothesis denying significant difference among different sample groups (VCs, Faculty Deans, Registrars, and the teaching faculty and the learners) on TQM operative factors curriculum design and delivery at the university level is accepted.

In-depth data analysis As a Post hoc Multiple Comparison test, the Least Significant Difference (LSD) is used to show mean differences in curriculum design and delivery among the sample group. The table below shows which factors have the most impact on the significance of the results.

**Table 3.** Post hoc (LSD) Test

| (I) Sample groups | (J) Sample groups | Mean Difference (I-J) | Sig. |
|---|---|---|---|
| VC's | Deans | 2.30 | 0.18 |
| | Registrars | 0.58 | 0.71 |
| | Teaching Faculty | 2.02 | 0.14 |
| | Students | 2.04 | 0.09 |
| Deans | Registrars | -1.60 | 0.23 |
| | Teaching Faculty | -0.47 | 0.67 |
| | Students | -0.08 | 0.85 |
| Registrars | Teaching Faculty | 1.32 | 0.32 |
| | Students | 1.53 | 0.20 |
| Teaching Faculty | Registrars | -1.43 | 0.22 |
| | Students | 0.20 | 0.40 |

**Significant level $p \leq 0.05$*

The p value is greater than 0.05 on the curriculum design and its deliverance therefor the difference between respondents is not significant. The groups do not vary as their significant value is higher than the significant level which is 0.05.

## Finding and Conclusion

On basis of the data analysis major findings revealed that paradigm of TQM did not nurture much in terms of curriculum design and delivery in the higher education institutions of Pakistan. Upon findings it is recommended that doctrine of TQM should be utilized in the formulation of curriculum and implementers should be trained accordingly for its real application.

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