

## **A RESEARCH ABOUT THE APPLICABILITY OF TOTAL QUALITY MANAGEMENT AT VOCATIONAL HIGH SCHOOLS IN TURKEY**

***İrfan ÇAĞLAR***

*(Çorum Vocational High School of Gazi University, Çorum, Turkey)*

### **Abstract**

*The mentality of total quality management is a modern administration mentality. This mentality is based on productivity, efficiency, and satisfaction of customers. And to adapt this mentality to Turkish educational system is very important for the improvement of this system. Vocational high schools aim to raise the intermediate man power which can be mentioned as the basic component of social development, and the application of total quality management mentality especially at vocational high schools plays an important role in the development of country. However; the application of total quality management is on a large scale depended on mental and physical background. It is necessary to know whether this background exists at vocational high schools in Turkey, and if it exists the next step is to know whether it could be turned into actions suitable for total quality management mentality. By the help of this study, it is aimed to examine the existence of mental and administrative background at vocational high schools and to understand whether this potential could be brought into action from total quality management point of view.*

### **Introduction**

Globalization is one of the most important issues in the world. It deeply affects our lives, needs, and most importantly, our points of view on certain issues. In As a result of this effect both individuals and institutions try to get rid of being stable and turn into constantly

changing entities, exploring and searching for perfection. So this fact, mentioned as dynamism at individual and institutional level, is the basic outcome of globalization that produces information. And this property enables the individuals and institutions to become more powerful in regard to information and production. The powerful individuals and institutions contribute to the formation of quality consciousness by putting forward their desires of constant development and by searching for perfection. Thus “Total Quality Management” (TQM) is the name of this level.

Total Quality Management is a philosophy of life. Its aim is to satisfy the expectations of clients in the most effective way and make them happy as well. It depends on perfection and continual development; moreover, it expresses a different view of management for institutions, that is, it is an administrative change for institutions based on participation. As regards, participation not only enhances productivity, but also contributes to the increase of quality consciousness at institutions.

In today’s global competitive market, in addition to participation, reflection of quality-cost-velocity trio to the production is also important. And this is directly related with the matter of transferring TQM process to the administration of institutions. The institution that can achieve this will be successful at the market of global competition. Therefore, total quality management is also important for Vocational High Schools (VHS) in Turkey. Since, the implementation of TQM at these institutions will lead them to check their processes frequently and then renew themselves. Thus, VHSs can reform their processes, their consideration of students, educational methods, and finally their mentality of administration in accordance with the new variations.

The applicability of total quality management at VHSs is directly related to the present administrative views of these institutions. Since every effort made for change including TQM, can be made true with the positive view of administrators; that is to say, the actual change starts in the mind. Therefore, determining whether TQM can be applied or not at VHSs in Turkey, has become an

important issue. So this can be achieved by regarding the administrative mentality of these schools to find out if they have a tendency towards the implementation of TQM. For such a purpose, conducting an administrative mentality questionnaire was thought to be appropriate. The rationale behind the questionnaire is to understand VHS administrators' mentality, and see if their mentality is suitable for total quality management. Their tendencies may be far behind the basis to produce quite more rational results.

### **Mentality Lying behind the Total Quality Management**

TQM which has emerged from the mentality of quality can be controlled. It has reached up to this level through passing some stages, and now it has turned out to be an administrative approach. These stages can be identified as *quality*, *quality control*, and *formation of total quality management mentality*.

#### *Quality*

For the last a couple of decads there has not been a common view on the concept of quality. For this reason, there are a lot of definitions about what quality is. Since factors such as globalization of world economy, technological developments and the change of social attitudes would also change the way of approach to the concept of quality. According to this understanding, the most detailed definition of quality has been made by Garvin. For him, quality is a composition of eight different stages which include performance, suitability, reliability, endurance, utility, aesthetic, credit, and so forth (GARVIN, 1987, pp. 104-108).

#### *Quality Control*

Quality control is defined as product quality. However, quality control is not only the control of product quality, but also the control of quality level of service, process, employees, engineers, administrators, system, institution and the set goals and targets of institution.

The efficient quality control can be provided by statistical quality control process in the frame of quality control system. The system of quality control includes administrative interventions that will be made at the stages of input, process, and output in order to produce product and service that reached to the level of appreciated quality (TEKİN, 1999, p.67). Among these interventions, the studies of statistical quality control occupy an important place. Especially after the world war II, the appearance of new quality techniques, the applicability of statistics, the development of industrial engineering and administration techniques increased the application chance of statistics in the area of quality control (GRANT- LEAVENWORTH, 1972, pp.1-15).

#### *The Appearance of Total Quality Management*

After the second world war, instead of controlling quality, the idea of producing or managing quality came to the foreground. Thus, quality started to be searched not in the product but in the process. Quality is accepted as process quality and a management system, rather than product quality. The mentality of quality and philosophy of management in Japan had great effect on this acceptance. On the contrary to quality control, quality management is not control-based, but it is a management style which is based on the desires and expectations of clients with a policy of continuous improvement. Here, the aim is to reach perfection at products and services setting out through all the stages that are important for clients (CHASE-AQUILANO, 1995, p.163).

According to Juran, the philosophy of quality management is a universal process. It consists of three stages such as; quality planning, quality control and quality improvement (MITRA, 1993, p.57). The point that these three stages have reached is expressed as the mentality of TQM. There are some factors that should exist at the core of total quality management, and these factors form the core of its philosophy. Quality experts like Feigenbaum and Ishikawa range these factors as follows (BERGMAN-KLEFSJO, 1994, pp.15-32):

1. to be quality focused
2. to be client focused
3. to be process focused
4. to calculate quality costs
5. to decide on using real data and statistics
6. to give place to continuous development (kaizen)
7. to apply management by objectives technique
8. to encourage group work and participant management
9. to control each source and input
10. to set out with mentality of “the next step is your client”
11. to be in an attitude against prevention

Through continuous self-development and by the help of these studies, the institution will have reached to a better competition level. To be able to compete with certain situations, the institution should be in such a position that it can instantly react to the environmental factors, and on top of that, the institution should be flexible. To achieve this flexibility, the institutions should fortify their management mentality via some practices such as strategical management, quality techniques, quality system, quality planning, instant production (JIT), benchmarking, management by objectives, and daily management (CARTIN, 1993, p.93).

The questionnaire items about the applicability of TQM principles at VHS are evaluated as in the following and it is estimated to have a reasonable conclusion in accordance with the data gathered.

### **The Assessment of Vocational High School Administrators’ Consideration of the Total Quality Management Issue**

#### *The Comprehension, Objective, Hypothesis and Method of the Research*

The research was carried out at 250 VHSs in Turkey. (approximately 240 vocational high schools participated in this research). However, at some schools more than one administrator

answered the questionnaire items, that is to say, 300 people in total took part in this research.

The aim of the questionnaire is to determine whether or not the management mentality of vocational high school administrator' is compatible with total quality management.

The hypothesis that this research is based on can cover the issues as follows: so there is a relation between

1. the education level of administrators and their perception of quality.
2. the education background of administrators and their attitude toward 'clients'.
3. the education background of administrators and their attitude toward education.
4. the education level of administrators and their attitude toward determination of institutional objectives.

In this survey, data collecting questionnaire method is used and a tailor-made questionnaire items were given to the whole group.

The data collected through questionnaire are classified and analyzed by using SPSS for WINDOWS programme. The data are shown with computer generated charts as in numbers and percentages.

### **The Results and Their General Evaluation and Assessment**

In order to check if the management mentality of vocational high school administrators is compatible with the TQM, a questionnaire consisted of thirteen questions was conducted.

The data taken from 300 vocational high school administrators according to their position, sexuality, educational level, field of education and foreign languages are shown in the following chart 1.

**Chart 1: The position, Gender, Education Level, Education Field and Foreign Languages Field of Administrators at Vocational High Schools**

Fields	Number	Ratio (%)
<b>A. Administrators' Positions</b>		
Director	126	42.0
Assistant Director	126	42.0
Head of Department	44	14.7
Coordinator	4	1.3
TOTAL	300	100.00
<b>B. Administrators' Gender</b>		
Female	40	13.3
Male	260	86.7
TOTAL	300	100.00
<b>C. Administrators' Education Level</b>		
Graduate	62	20.7
Bachelors (BA, BS)	56	18.7
Doctorate (PhD.)	72	24.0
Upper Doctorate (Professorship)	110	36.7
TOTAL	300	100.00
<b>D. Administrators' Fields of Education</b>		
Administrative sciences	52	17.3
Economics	38	12.7
Law	4	1.3
Engineering	122	40.7
Education	62	20.7
Medical Doctor	14	4.7
Tourism	4	1.3
Unanswered	4	1.3
TOTAL	300	100.00
<b>E. Administrators' Fields of Foreign Language</b>		
English	268	89.3
French	20	6.7
German	8	2.7
Arabic	2	0.7
Unanswered	2	0.7
TOTAL	300	100.00

The distributions of chart 1 can be interpreted as follows:

a) 84% of the administrators participated in the research are directors and assistant directors, 14.7% are Heads of Departments, and 1.3% hold the coordinator position.

b) The gender distribution is 86.7% men and 13.3% women. It is understood from the distribution that men are in majority.

c) The education level distribution intensifies on upper doctorate level with 36.7% ratio. Doctorate ratio is 24%, and ratio of MA, MS degree is 18.7%. Besides, ratio of graduate degree is 20.7%. Thus, most vocational high school administrators presumably have post graduate education.

d) In the distribution of administrators' education field, engineering is 40.7%. It is followed by education with 20.7% and administration with 17.3%.

e) Foreign Language distribution of administrators concentrates on English with the ratio of 89.3%. It is followed by other language alternatives.

The chart distributions about the factors expressed by experts like Feigenbaum, and which can be used as main criteria while testing total quality management mentality are as follows:

**Chart 2: The Distribution about Quality-Focusing, Client-Focusing, Determination of Institution Objectives Together, Control Mentality and Participating in Decisions**

Fields	Number	Ratio (%)
<b>A. Quality-Focusing</b>		
a) The institutions should be quality-focused	106	35.3
b) The more quality means the more cost.	122	40.7
c) Both of them	72	24.0
TOTAL	300	100.00
<b>B. Client-Focusing</b>		
a) Client is important and has to be satisfied.	122	40.7
b) Client is always right and he directs us.	126	42.0
c) Both of them	52	17.3
TOTAL	300	100.00

<b>C.Determination of Institutional Objectives (Management by Objectives)</b>		
a)Determination of institutional Objectives is based on a type of negotiation.	118	39.3
b)Both managers and employees dream of the highest success level.	92	30.7
c)Both of them	88	29.3
d)Unanswered	2	0.7
<b>TOTAL</b>	<b>300</b>	<b>100.00</b>
<b>D.Control Mentality</b>		
a)Control has to be realized both when needed and at the end of the process.	94	31.3
b)Throughout the whole process every input and source should be controlled continuously.	141	47.0
c)Both of them	65	21.7
<b>TOTAL</b>	<b>300</b>	<b>100.00</b>
<b>E.Participating in Decisions</b>		
a)Suggestions coming from lower grade are listened to, but they are not included in the organizational decisions.	120	40.0
b)Suggestions coming from lower grade are revised and if found valuable, they are put in action in decisions and practices.	114	38.0
c)Both of them	66	22.0
<b>TOTAL</b>	<b>300</b>	<b>100.00</b>

When we look at the distributions of Chart 2, we may reach the following results:

a) The administrator ratio who are for quality-focusing is 35.3%. This is not a positive result. However, considering “both of them” alternative in a positive frame, help us to be optimistic on this matter.

b) The attitude toward client-focusing seems positive with a ratio of 42%.

c) The mentality that takes negotiations as a basis in determining institutional objectives is 39.3%; however, the ratio of people who say that these objectives should be determined in a consensus is 30.7%. Nevertheless, when “both of them” alternative

is taken into consideration, we can say that the mentality of administrators is suitable for total quality management.

d) In the distribution of control mentality, the ratio of administrators who are for process-focused control is 47%. This can be accepted as a positive result for total quality management mentality.

e) In participating decisions, the ratio of administrator mentality putting emphasis on participation is 38%. Even though the ratio of administrators who are against this idea seems to be 40%. So when it is considered with “both of them” alternative, the result can be accepted as positive.

In addition to the main criteria in testing total quality management mentality, there are some other criteria that are secondary.

### Chart 3. The Distribution about Motivation, Attitude Toward Education and Change

Fields	Number	Ratio (%)
<b>A.Motivation</b>		
a) Basic component of motivation is Money.	24	8.0
b) Basic motivation component is firm culture and success honour.	156	52.0
c) Both of them	120	40.0
TOTAL	300	100.00
<b>B.Attitude Toward Education</b>		
a) Education is an activity that has to be consulted when it is necessary.	120	40.0
b) Education is a continuous activity. Employees need new information with mentality of continuous development.	132	44.0
c) Both of them	48	16.0
TOTAL	300	100.00
<b>C.Change</b>		
a) Change is a risky cost component. For this reason, firms should have an unchanging work system.	6	2.0
b) All administrators have to take care of the principle “The only unchanging thing is changing.”	282	94.0
c) Both of them	12	4.0
TOTAL	300	100.00

The comments on Chart 3 distributions are as follows:

a) The ratio of administrators who consider that motivation is related to firm culture is 52%. When considered with “both of them” alternative, the result seems to be very significant for total quality management.

b) Focusing administrators’ attitude toward education on continuity alternative is a positive improvement. The distribution happens to be in this way with a ratio of 44%.

c) It is observed that administrators are very relieved on the matter of change. Because the ratio of administrators who are for absolute change is 94%. Such distribution of choice is important for total quality management.

### Analysis of the Findings

To this part, “comparative charts” have been formed in which compound classifications of two or more variables are shown as frequency and percentages by using SPSS for WINDOWS computer programme. As a further step, in the analysis of findings, “CHI-SQUARE INDEPENDENCY TEST” will be applied. The analysis and calculations about independency tests are as shown on the chart.

### Chart 4. Interest Analysis Distribution Relating to Hypothesis

Tested Interest Fields	Chi-Square Values	
	Calculated	Chart(Table)
A.The relation between the education level of administrators and their perception of quality	39.768	12.590
B.The relation between the education field of administrators and their attitude toward clients.	30.959	9.488
C.The relation between the education field of administrators and their attitude toward education.	21.716	9.488
D.The relation between the education level of administrators and their attitude toward determination of institutional objectives	11.492	9.488

According to the comments made in chart 4, due to the fact that the value whose table value-relation about the hypothesis was realized as actual table value, it may have quite positive effect on the relations among the variables. In other words, the hypothesis is justified.

### **Overall Assessment and Conclusion**

On the chart indicators where the findings are analyzed, the distributions about the factors that can be accepted as main criteria of total quality management mentality indicate that the administrative mentality at VHSs is generally suitable for TQM. However, in these two items such as Quality-Focusing and Participation, the distribution values are lower when compared with other alternatives. Nevertheless, the distinction between the distributions is not too much. That is to say, the positive distribution (35.3% in quality-focusing and 38% in participation) can not be an underestimated development. Because when considered with “both of them” alternative, these results will be more significant.

When taken into consideration it can be mentioned that the upper grade administrators of vocational high schools are, at least theoretically, accustomed to TQM mentality.

When we look at the appropriateness analysis of findings, it is understood that there is a relation between administrators' education levels and their perception of quality, administrators' educational fields and their attitudes toward 'clients' and administrators' educational levels and their attitude toward determination of institutional objectives.

In addition to all these results, it can easily be said that if the measures below are taken, an educational service suitable for the mentality of TQM can be produced at vocational high schools. The measures that have to be taken so as to enforce the process of TQM and implement an educational service suitable for total quality management can be listed as follows:

a)The upper grade administration of universities on which the vocational high schools are depended, should seriously contribute to the implementation of TQM.

b)The administrators of VHSs have to be convinced on the benefits of total quality management.

c)The necessary fundamental studies should be done to be ready for total quality management.

d)The necessary authority and power should be given to vocational high school administrators in building up required relations with other institutions and organizations in the vicinity.

e)In realizing school-industry cooperation, the administrations of vocational high schools should be supported seriously.

f) On technological and scientific issues necessary fundamental studies should be provided.

g) Participant, open to change, and highly creative organizational atmosphere should be provided at vocational high schools.

h)TQM studies as a course should be added to the curriculum of vocational high schools.

i) Both national and international meetings should be held in order to help administrators and employees to become conscious on the matter of quality (For instance, IVETA programmes)

j) Both national and international competitive atmosphere should be provided among VHSs.

k) The administrators of vocational high schools should constantly follow the recent developments and innovations in the curriculum and institutions.

On the condition that these above-mentioned measures are taken, the mentality of total quality management can be realized at vocational high schools in Turkey. Because the already existing administration structure of these schools is even now in a condition that can practise total quality management. In fact, there are some other vocational high schools that have been in an effort to implement TQM. Some of them even try to take their services under guarantee with ISO 9000 standards. As a final remark, the future of the country will be taken under guarantee depending on the increasing efforts and demands for total quality management.

## BIBLIOGRAPHY

1. BERGMAN, Bo and KLEFSJO, Bengt., Quality : From Customer Needs to Customer Satisfaction, McGraw-Hill Book Inc.
2. CHASE, Richard B. And AQUILANO, N.J., Production and Operations Management, Richard D. Irvin Inc., Homewood, Illinois.
3. CARTIN, Thomas J., Principles and practises of TQM, ASQC Quality press, Winconsin.
4. GARVIN, David A., “Competing On The Eight Dimesions Of Quality”, Harvard Business Review, November-December
5. GRANT, Eugene L. and LEAVENWORTH, Richard S., Statistical Quality Control, McGraw-Hill Book Company.
6. MITRA, Amitava., Fundamentals Of Quality Contol and Improvement, McMillan Publishing Company, N.Y:
7. TEKİN, Mahmut., Toplam Kalite Yönetimi, kuzucular ofset, konya

## X ü l a s ə

### TÜRKIYƏNİN TEXNİKİ-PEŞƏ MƏKTƏBLƏRİNDƏ KEYFİYYƏTİN MENECMENTİ

***İrfan ÇAĞLAR***

*(Qazi Üniversitəsinin Çorum Meslek Okulu, Türkiyə)*

Ümumi keyfiyyət menecmenti mentaliteti dedikdə müasir idarəçilik mentaliteti başa düşülür. Mentalitet məhsuldarlığa, səmərəliliyə və istehlakçıların tələbatlarının ödənilməsinə əsaslanır. Bu mentalitetin Türkiyə təhsil sisteminə tətbiqi sistemin təkmilləşdirilməsi üçün olduqca zəruridir. Texniki-peşə məktəblərinin məqsədi sosial inkişafın əsas komponenti hesab edilə biləcək insan amilinin təsirini artırmaqdan ibarətdir və ümumi keyfiyyət menecmenti mentalitetinin, xüsusən də, texniki-peşə məktəblərində tətbiqi ölkənin inkişafında mühüm rol oynayır. Lakin ümumi keyfiyyət menecmentinin tətbiqi xeyli dərəcədə mənəvi və fiziki şəraitdən asılıdır. Bunu bilmək zəruridir ki, bu şərait Türkiyənin texniki-peşə məktəblərində mövcuddurmu və əgər mövcuddursa, o zaman növbəti addım bu şərtlərin ümumi keyfiyyət menecmenti mentaliteti üçün uyğun olan fəaliyyətə

cevrilməsinin mümkün olub-olmadığını müəyyənləşdirməkdən ibarətdir. Bu tədqiqatın məqsədi texniki-peşə məktəblərində mənəvi və inzibati əsasların mövcudluğunu tədqiq etmək və bu potensialın ümumi keyfiyyət menecmenti baxımından fəallaşdırılması imkanlarını nəzərdən keçirməkdir.