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Procedia - Social and Behavioral Sciences 106 (2013) 1021 – 1030

Procedia
Social and Behavioral Sciences

4th International Conference on New Horizons in Education

# Effects of total quality management on teachers and students

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**Abstract**

In educational establishments, a study has been done on the results of Total Quality Management (TQM) between student and teacher. Training prudential students in company with a coherence and solidarity by the educational establishments, which play a part in forming of the public, will be possible only by training in line with the expectations of students and the public. TQM (Total Quality Management) has a great contributory in forming of this education system. Adapting to TQM (Total Quality Management) will make important changes in classroom. By the help of this method, the communication distance between student and teacher will disappear. Therefore, student and their self-confidences will increase within guidance. For TQM (Total Quality Management) the thing is to catch the better not the perfect. TQM (Total Quality Management) has important superiorities in development of education system and according to its education that can meet the expectations of the public. It's a more rational process to apply this method in educational establishments than manufacturing sector. When it is compared with traditional education, it's seen that it has more superiority in development of education system and in training of qualified personals who can meet the expectations of the public. TQM (Total Quality Management) creates an opportunity to restore trust of the public to the education system.



Keywords: Total Quality Management, education system, student and teacher;

## 1. INTRODUCTION

Societies that hold the knowledge by human sources will be dominate in centuries to come, it is inevitable. All countries must invest in human sources which will work in goods sector, service sector and information sectors and will keep these sectors alive. Educational institution which sustain this human source is vocational education. Therefore, we have to prepare vocational education to information society by reviewing it once again, in our country.

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doi:10.1016/j.sbspro.2013.12.116

In recent years, big changes have occurred in the economic field in the world, in parallel with this, changes have been needed in every field of working life in our country too. In this sense, role and importance of the education have increased in the economic, social and cultural development. It has become an obligatory to review current structure and content of secondary education, in particular vocational secondary education.

In our day, there is an intense competition in global market. It's gaining more and more importance to grow man power has the quality to meet expectations of business world in this competition. If education system will fail at growing qualified man power, the price for this failure shall be paid either by enterprises thereby training their available employees with a very high cost, or by society thereby standing for purchasing of goods and services of poor quality.

For many years, state institutions and organizations and private enterprises have difficulties with finding personnel is suitable for the qualifications they want. Non-existence of qualified personnel in a country, where most of the young individuals graduated from higher education have become unemployed, results in increasing of the worries about education institutions.

If it is desired to have a dedicated work force with specific skills, concept of quality should be considered and discussed in education institutions, before the enterprises. This is because a quality product and service will be possible only by a good education.

In accordance with National Education Basic Law, law no.1739 and dated 1973, that determines the structure of education system in Turkey, education system is composed of two main parts as formal education and non-formal education. Formal education includes pre-school education, primary education, secondary education and higher education. From 2009, studies have been maintained for raising access to pre-school education of 5-age-group children up to 100%. As for 8-year compulsory primary education, it includes 6-14 age group.

In primary education grade in which different school types don't exist, all students follow general education program. Programs are for vocational and technical education don't exist at this grade. After 8-year compulsory primary education, there options are offered. General secondary education, vocational and technical secondary education and non-formal education. Secondary education, in Turkey, aims at young individuals between the age of 14-17. Secondary education, which is raised to four years in 2006, is followed by high education; two-year vocational school of higher education and/or four-year university education. Current education system in Turkey is illustrated on Figure 1 (ERI, 2012).

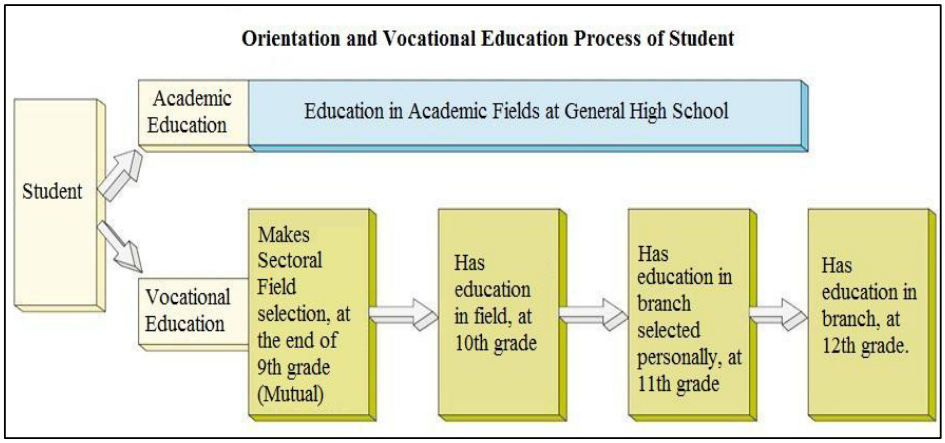


Fig 1. Current education system in Turkey (VTTW 2012).

As you see on Figure 1, student who reaches to secondary education process, goes towards academic or vocational education. No option other than progress in higher education is offered to the students who go to general high school as having an academic purpose, that is way these students go training centers under the

current conditions or seek to increase their chances in higher education by taking private lessons. As for students who head towards vocational education, they must have education at the field to be selected or has to be selected by them and then must begin to work, because their academic education alternative is too low. Due to the education is taken by the students , who take mutual lesson at 9th grade, intended for field at 10th grade and for branch at 11th grade, will be based on determination of their futures, their educational levels must go parallel with current technological conditions. While conventional education model focuses on ability of individuals in reading, writing and calculations of basic arithmetic , the basis of focusing on imagination and design phases of the role of individual in production process needs to be structured on eight key competences, aligned as; 1) communication in native language, 2) communication in a different language, 3) basic mathematics, science and technology competences, 4) digital competence, 5) learning to learn, 6) interpersonal and civil competences, 7) entrepreneurship and 8) cultural expression. Cycle of instruction schedule is illustrated on Figure 2.

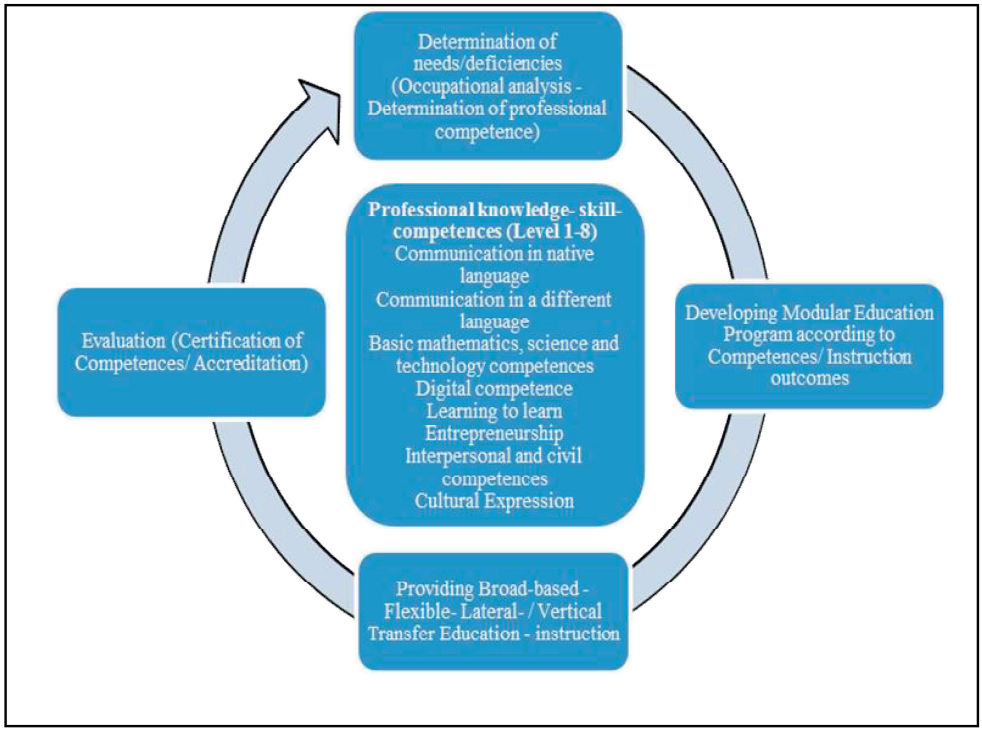


Fig 2. Instruction schedule cycle (VTTW 2012).

Countries have the desire to solve basic problems of vocational education by crossing into models of forming new instruction schedule, need to establish “Instruction Schedule Cycle” firstly. After this stage, a structure that allows education programs to be updated constantly in parallel with market demand, should be added in this cycle. Managements forms of this structure are important as well as its establishment. It should be provided that employee, employer, education institutions etc.all stakeholders work together in order to system can work. It will mean that if one wheel doesn't work, system doesn't work too. These wheels are illustrated on Figure 3.

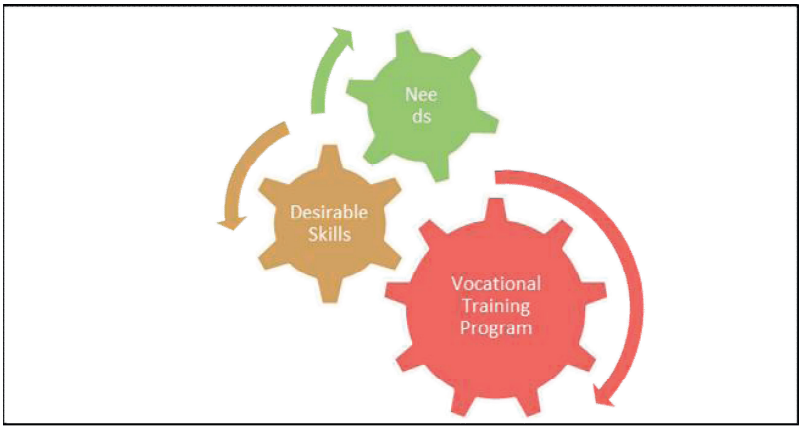


Fig 3. Wheels of Instruction Schedule (VTTW, 2012).

In our country, classical education concept dominates in all education institutions in particular higher education institutions. This concept raises individuals who are greatly passive, with weak character in investigation, without self-confidence, cannot easily accommodate with innovations and change.

In classical education, education activity is generally practiced through a one-way information transfer from teacher to student. As for student, listening silently instead of participating is considered as a proper environment for instruction. In this environment, success is achieved by measuring generally how much of the transferred information is kept in mind? It is not taken into consideration whether the students graduated from universities (outcomes) are suitable for expectations of our clients (society, establishment in which career is built, protectors and even students in person) or not.

In classical education concept, there is almost no information exchange between education institutions and neither “suppliers” nor “clients”. It seems like that success of such a system depends on carrying out how it is planned. As for our “outcomes” are being admired by supreme establishments are in our client position (society, establishment in which career is built, protectors and even students in person) it is not among the worries of education institutions. On table 1, Income, process and outcome concepts in the Conventional Education Concept are illustrated.

Table 1. Income, process and outcome concepts in the Conventional Education Concept (Karabulut, 2004).

| Income | Process | Outcome |
|---|---|---|
| Student<br>Teacher<br>Classroom, Laboratory<br>Library | Information transfer from teacher to student | Students with information storage |

While the reason why desired purposes cannot be achieved in this concept is seen as that the rules are violated, education institutions don't feel the need to cooperate with the establishments where our graduates work, with the protectors and the students in order to enhance the success; and motivation of students and teachers is not important in this concept.

*1.1 Total Quality Concept in Education*

Access to quality education has been becoming more and more important for Turkey. We should offer, primarily, a comprehensive basic education program to our young individuals in order to they can make their potentials real, participate effectively in social life in the way they want and benefit from employment opportunities are with dignity. Afterwards, we should offer programs that give wider and transferable skills as well as vocational skills within the scope of quality secondary education.

On one hand, while steps are important for enhancing vocational and technical education has been taking, on the other hand, problems are important in many fields, such as access and attendance to secondary education, quality of offered education, general education and vocational education and even quality differences among different vocational education programs, learning level accessed by our young individuals, relationship between vocational education and labor markets, and experiences of our young individuals in working life, attract the attention ERI (2012).

Quality concept has been a subject that was interested too much throughout history and that was born with production relations even though their dimensions are different. Although it is suggested that first records on quality go back to B.C. 2150, existence of the quality as a concept runs across 19th century (Yalçın, 1998).

In our days, it is commonly accepted that quality should be used in all firms and in all fields of firms. Although quality issue has been brought into question by directors of modern organizations more frequently and on a great number of academic and business publication, on media and in education seminars, it is seen in the literature that there is been no agreement on quality subject and quality has been defined in many different ways (Reeves and Bednar (1994). For Reeves and Bednar (1994), quality is defined as "The most important power leading the economic development of the companies in international market"; as for Jüren it is "suitability for use"; as for Crosby it is "suitability for necessities" Tan and Peşkircioğlu (1991). For Kauro Ishikawa, one of the leaders of Total Quality Management, quality is defined as to develop the product is control-applied, the most economic, the most useful and always consumer-pleasing, and then to make design of it and to produce and to provide after selling services" Deimer (1994). Apart from these, although it is possible to give many definition of quality, the common property of definitions made is that they discuss the quality as the customer-oriented concept Peker, 1993 and Kavrakoğlu, (1996).

Total quality management is a management concept that defines the quality as "suitability for purpose" and that defines the purpose as "requests of client". As being different from the other regimes, total quality management is seen as a regime that can be adapted to structure of any kind of organizations and makes the organizations, which they are adapted, more excellent. It is argued that the most important reason why total quality management is different than the other regimes is that it has a way of thinking which creates the synthesis formed by evaluating the necessities of the establishments in a too different way than conventional approaches, in other words, it has a philosophy. Because it is possible to adapt philosophic properties of quality management to structure of any kind of organization. It is possible to put these philosophic properties in order, as Yenersoy (1997).

Main Objective:

- To maintain own entity
- A healthy infrastructure is assurance. In order to provide persistence in quality, management efforts should be supported by a correct work system.
- Customer satisfaction.

Education institutions that play role in forming the society may train prudential students in unity by means of giving education in accordance with the expectations of students and society, it should be prepared an environment to enhance quality of goods and services by training the people as producer and consume. The point is allow the students to realize the necessities that will head them towards developing, constantly. It should be kept in mind that Total Quality Management is a problem solving method that will meet necessities in question. In order to develop qualification of education and to raise success of student, it is required to create the infrastructure that will meet expectations of education organizations, students and society. A studying method that is participative and based on

collaboration, should be formed.

A balance should exist between their own qualifications of school directors and teachers and qualifications required by their duties; they should get the most proper behavior in resolving knowledge and skill deficiencies acquired before service, in benefiting from in- service training and in applying new method and new technology. In the rapidly changing world, no education institutions has the opportunity to give knowledge and skills are enough for a lifetime, at once. Countries look over their education systems, constantly, and restructure them in accordance with the conditions of age and today.

Table 2. Student size in general and vocational education (VTTW, 2012).

| Years | Total | General Secondary Education | Vocational and Technical | (%) 3/1 |
|---|---|---|---|---|
| 1997-1998 | 2.129.989 | 1.166.195 | 963.794 | 45,2 |
| 1998-1999 | 2.280.676 | 1.282.605 | 998.071 | 43,8 |
| 1999-2000 | 2.316.350 | 1.399.912 | 916.438 | 39,6 |
| 2000-2001 | 2.362.943 | 1.487.415 | 875.528 | 37,1 |
| 2001-2002 | 2.579.819 | 1.673.363 | 906.456 | 35,1 |
| 2002-2003 | 3.023.602 | 2.038.027 | 985.575 | 32,6 |
| 2003-2004 | 3.014.392 | 1.963.998 | 1.050.394 | 34,8 |
| 2004-2005 | 2.949.449 | 1.937.055 | 1.012.394 | 34,3 |
| 2005-2006 | 3.258.254 | 2.075.617 | 1.182.637 | 36,3 |
| 2006-2007 | 3.386.717 | 2.142.218 | 1.244.499 | 36,7 |
| 2007-2008 | 3.245.322 | 1.980.452 | 1.264.870 | 39,0 |
| 2008-2009 | 3.837.164 | 2.271.900 | 1.565.264 | 40,8 |
| 2009-2010 | 4.240.139 | 2.420.691 | 1.819.448 | 42,9 |
| 2010-2011 | 4.748.610 | 2.676.123 | 2.072.487 | 43,6 |

As seen on Table 2, when statistics of education is examined, it is seen that interest to vocational and technical education increased by 2003-2004 academic year. While total rate of vocational education at secondary education is 32,6% in 2002-2003 academic year, the rate of students of vocational education increased to 43,6% in 2010-2011 academic year, in proportion to students of general education. The main reason why the interest to vocational technical education increased, is explained in several ways. One of them is defined as the increased demand of growing economy to labor. Post crisis, between the years of 2002-2007, average annual growth rate was 7,3. Growing manufacturing industry formed 727 thousand additional employments in the period in question. In growing period, especially in Marmara region, there was a strong demand to vocational high schools, this demand could not be met because of the lack of capacity. Another reason for the interest increase to vocational secondary education is defined as the opportunity of open admission that is provided to MYO (Vocational school of higher education). It is seen that positive and negative effects of open admission will be always an object at issue. As for another reason for the interest increase to vocational secondary education, the reason is the efforts in order to remove the coefficient application by means of

government. Both expectations from government in this direction and efforts of government and support given by society to these studies, provide an increase in rate of schooling at vocational secondary education. Although it has been decided to remove the coefficient completely for 2011-2012 academic year, there are worries about that this subject will be delayed for a longer time, because this subject has been brought to trial by politicians, and therefore it causes worries about in preferring vocational secondary education even if just a bit (VTTW, 2012).

*1.2 Centralist Education System*

Education system is highly centralist in Turkey. Education and instruction entities, programs and curriculums are prepared in center. According to data of OECD, 94% of decisions about education is made at central level, in Turkey. Existence of differences continue among the regions, provinces, districts and schools. That is why charge of central organization has gradually increased over the years; this approach caused development of central staff and gathering teams of experts in Ankara, and moreover, local staffs that are not given authority and responsibility cannot be grown. Therefore, even locally designed projects are obliged to be carried out as center-oriented. Local demands have no impact on the curriculum that is determined centrally. Central curriculum restricts creativeness of teacher (VTTW, 2012).

*1.3 Occupational Standards, Educational Standards, Learning Outcomes*

When the subject of validity of formal, common and informal learning is discussed, it is possible to mention three type standards about competences. Two main standards are related to category:

1) Occupational standards
2) Education-Instruction standards
3) Measurement of learning, evaluation, validity and certification process standards

First two are related to main standard category. These two categories work according to different logics that reflect different priorities, motivations and purposes. Occupational standard is a classification and also are definitions of main works done by people. According to the logic of employment, in these standards, it is emphasized what should people do, how can he do this and how well should he do. These are expressed as competences and are written as learning outcomes. For this reason, when educators prepare their programs, they should base these upon current occupational standards or should determine learning outcomes in the studies that they do with relative sector. All countries have occupational standards; every country has specific style and format. International Standard Classification of Occupations (ISCO) supported by ILO (International Labor Organization) is a occupational standard which is mostly-accepted. Occupational standards function as a bridge between labor market and education system; because educational standards (curriculums and pedagogy) are developed based upon occupational standards.

*1.4 It is possible to align total quality principles in education as following.*

- Determination of objectives are suitable for expectations of society.
- Reaching the set purpose at once.
- Measuring the level of reaching the purpose.
- Adopting to follow the developments as a principle.
- Giving importance to qualified training.
- Establishing the active communication network.
- Giving importance to team work in management.
- Providing the motivation in management.
- Establishing a democratic management system.

*1.5 Properties of Total Quality Education*

It is possible to align properties of total quality education as; Relations with suppliers, full participation,

continuous improvement.

*1.6 Relations with Suppliers*

In contrast to conventional management concept, Total Quality Management predicts a close cooperation with the other education institutions providing income (Student, teacher and education material) to itself. Since, unless "income" is quality, an education with desired quality cannot be realized. For this reason, it is extremely important that also institutions that provides students to customer education institution, should give quality education. Today in our country, the reason why university education hasn't the desired quality is, before the sustained educational activities, that secondary education institutions cannot train students in expected standard. In this case, the duty of university managements is to indicate clearly they expect how a student profile and which properties should be exist, by providing a close cooperation with institutions related to secondary education (Ministry of National Education, relative General Directorates. National Education Directorships and school managers) and to give the needed support for providing this.

*1.7 Full Participation*

Quality of educational activities should not be expected only from instructor. As we mentioned before, the purpose is not to load knowledge. Directors of education institution are responsible for forming the learning environment. For providing general participation, motivation of instructors, students and other personnel should be provided. The main rule of providing the quality is to provide active participation of everybody in a working group or quality circle. Working groups related to education are an important and inseparable part of quality organization of the institution.

By cooperating with the other teachers, incorporating these teachers into team work by means of teacher is in leader position, gives positive results. If we need to clarify the issue by an example; an economy professor who applies Total Quality Management on Master program at "Eastem Miane Technical Coltege", indicated that students began to read the graphics properly and interpret the basic equations properly with the help of mathematics professor. Again in the same program, he indicated that success of the students increased in marketing class as a result of insisting on price theory through the request of marketing professor. Student, who apprehends whole subject by means of team work and knows he has a role and responsibility in dealing with the problems in his team, will control himself and his team friends in order to increase the success, by protecting his duties and responsibilities.

*1.8 Continuous Improvement*

Total Quality Management is not to catch the perfect, it is to catch better of the good. Seeking to better is a thinking and practicing process. Total Quality Management concept that aims to raise quality of products and to increase productivity in manufacturing firms, also aims to raise quality of education in education sector.

Quality improvement is required to continuous improving of all activities in the education process. Better quality can be reached by internal and external quality improvements. The main purpose of improving the internal quality is to make business processes more simple and more fluent. Avoiding from the problems and failures in the business processes, will decrease the cost in the long term. The purpose of improving the external quality is to raise satisfaction of external customer. For this, innovations should be reflected on curriculums and new learning methods should be practiced. In this way, quality of our products, in other words, quality of students trained by us, will increase too. If education institutions want to enhance current quality of education or to present new quality purposes, they should adopt continuous improvement as a principle.

## 2. Instructor and Student in Total Quality Management

Certain changes will come into existence in classroom environment by adopting Total Quality Management. By putting Total Quality Management into practice, an instructional profile that that can establish a dialog with his student instead of the formal relationship between student and teacher and that can focus on the student, that guides student away, that doesn't criticize but leads the way, that shares the knowledge rather than give coordinated knowledge, that

looks for knowledge in external environment, not in classroom, that follows the developments of science and technology, that promotes the students to research, that knows all kinds of necessities of student, that looks for the reason of the failure but doesn't judge , will be drawn.

By practicing Total Quality Management, the radical change in the top management and teaching staff, will affect the students unavoidably. Students graduated from the schools where Total Quality Management is applied, will develop skill in the fields of communication, team work, problem solving, learning. Student won't be bored in the lessons any more, will express his thoughts easily and will head towards search and examine. He will go an upper foundation by Desire to Knowledge acquisition. A society that follows technological developments, that loves team work, that has respect for his teachers and friends, that products but doesn't consume with students, will come into existence. A student who became qualified before the service, will see with a critical eye. It will bring student in ability of reel thought. In this way, individuals that became qualified before the service, will play a big role in country development.

## 3. Result

In comparison with conventional education concept, Total Quality Management has great superiorities in developing education system and in growing qualified personnel that can meet expectations of society. Total Quality Management creates an opportunity in restoring reliance of the society on education system. Missing of business world to reach qualified personnel, will be met by continuous improvement of education system. It seems that this improvement cannot be provided by conventional education system, which is closed to environment. Improving the education system will lead to an increase in producing power of country. For this reason, it is more significant and essential to practice Total Quality Management in education institutions, before the production enterprises. If our education system fails and produces outcomes of poor quality, it will mean wasting all of the sources of society.

Total Quality Management has a qualification that will provide important contributions to competition in global market, by means of catching the innovation in our enterprises and society, and that will bring a breath of fresh air to our education system. In order to make Total Quality Management real in education institutions, however, top management must read philosophy of Total Quality Management like a book, set his heart on and take the leadership. If not, making Total Quality Management real won't be possible.

Execution of Total Quality Management in education provides the following advantages:

- Avoidance of wastage
- Increasing the quality
- Forming of well-kept buildings and environment
- Procuring successful academic members
- Raising the morale and prolificacy
- Achieving perfect exam results
- High success rate
- Specialization
- Getting support from families, industry and society
- Active usage of sources and enhancement of this usage
- Continuous improvement and development.

When enterprises producing good and service carry out concept and philosophy of Total Quality Management properly, they will reap many benefits of this modern management model. In the same way, this model, which is carried out in education sector too, will bring several benefits especially in terms of students, educators and personnel. First of all, high student will be achieved. Because 7 requests and necessities of students are in the heart of this model. Along with high student success, there will be an increase in number of student that will want to check in this education sector. Therefore, advantage to find qualified student among the increased number and to make selection, will be caught. Anyone works in education sector will develop a sense of

responsibility. Similarly, it can be brought directors of education sector in strong competences of leadership and planning.

Workers will have high morale due to participation in management and decisions. A desire and an ability to finish a given work in a shorter time, will be created to workers. In order to production of unlimited, common and continuous knowledge, as opposed to inadequacy in information transfer, "learning the way to reach the knowledge and improving himself continuously" of human has become the main objective of education. In other words, the underlying purpose of for modern education is to give behaviors of “Capability development”, “Creativeness”, “Impersonating”, “Adaptation to new situations in the future”, “Generating new solutions for new problems". Education sector and system should adopt concept of Total Quality Management that has view of continuous improvement and development in its philosophy and should put it into practice. If the desire is to have a self-dedicated labor with significant skills, concept of quality should be handled in education institutions before the enterprises and should be discussed. Because a qualified product and service will be possible only by a good education. It should be kept in mind that Total Quality Management is a problem solving method that will meet need in question. In order to develop qualification of education and increase success of student, a working system of education organizations based on sharing and cooperation, should be formed in schools.

Result is obtained by a teacher profile that can establish a dialog with his student instead of the formal relationship between student and teacher and that can focus on the student, that guides student away, that doesn't criticize but leads the way, that shares the knowledge rather than give coordinated knowledge, that looks for knowledge in external environment, not in classroom, that follows the developments in science and technology, that promotes the students to research, that knows all kinds of necessities of student, that looks for the reason of the failure but doesn't judge.

**Acknowledgements**

In this study, who helped us faculty of education all our masters thank you.

**References**

Karabulut, A., (2004). Total quality management in education. Journal of Standard, 513, 48-52.

Vocational and technical education Education Reform Initiative of the updated situation analysis of Koç Holding. 2012.

The ministry of National Education (MEB) Vocational and Technical Education Workshop, Antalya, 2012.

Reeves, C.A. & Bednar, D.A. (1994). Defining quality. Alternatives and Implications. Academic of Management Review,19, 3.

Diemer, R. V. (1994). İletişim ve İşbirliğinde Kalite. MPM Journal of productivity, 2.

Kavrakoğlu, İ. (1996). Quality - Quality Assurance ve ISO 9000. İstanbul. Kalder publishing.

Tan, S., & Peşkircioğlu, N. (1991) Cost of poor quality. Ankara: MPM

Peker, Ö. (1993). Total quality management. Journal of Public Management,1.

Yenersoy, G. (1997). Total quality management “The First Step In Search Of Perfection Journey”. Istanbul. Rota publishing.

Yalçın, F.A. (1998). The role of leadership in total quality management. Leadership Symposium in the 21st Century on Naval Academy 5-6 June 1997, İstanbul

Abbreviations:
ERI: Education reform initiative.
VTTW: Vocational and technical training workshop.