

The Problems of Education of Technology and the Relations with the Field of Industry in Professional and Technical Education

Rıdvan KÜÇÜKALİ

Atatürk University

e-posta: kucukali1960@hotmail.com

Abstract: It has become one of the fundamental obligations of today's communities to obtain the quality of having knowledge and technology. For that reason, today's communities and people should endeavour to constantly improve themselves and acquire the habit of learning all through the life. At the present time, these developments occurring in a dizzying speed are forcing the communities and people to obtain more information and keep up with the technological advancements. This situation has brought about the problem of the acquisition of information, the transmission of knowledge and the problem of having mature/ grown people. Nowadays, the education and teaching that are carried out with the traditional methods and equipments in the educational institutions giving their places to the multiple learning environments formed by making use of the information technologies. Because of this will be possible when the administrators re-establish the teaching environment employing the technology in the educational institutions presents the students a flexible, collaborative and prosperous environment, it will also provide the administrators of education and teachers with so significant conveniences and facilities. However, the questions 'how can such an environment be more efficient in learning of a student, how can a teacher organize the teaching setting in a favourable way that will make the students possible to learn on their own, how often and how efficient can he use the technology' should definitely be answered in advance.

Key Words: Education, Technology, Technology Education.

Introduction

In education, social changes have a great role on the limelight that supports learning in teaching and learning process. An increase in alternative educational programmes and variations of schools caused individualism to excel in learning process. And these changes resulted in a change in content of teaching programmes (Ozden: 2002,s.16-19). So, this situation excelled the importance of learning more than teaching. It is needed to teach"to learn" to the new generations. Moreover, environments are to be constructed to help students practice to keep the information they learnt for a long time in addition to theoretic knowledge. Doubtlessly, education systems of our day have to invent organisations, methods and new systems, which are not bound to traditions, in order to respond the increasing demands effectively with their limited opportunities. This, however, will conclude new problems and directions in education.

We aimed to find answers for; professional and technical education and their relationship with industry which we assume as their practicing area; their features of working together; their skills of co-operation in project preparing; the harmonial features between professional and technical colleges and tools that are used in the industrial sector; physical conditions and educating and teaching environments of professional and technical colleges; the sufficiency of acquiring skills and teaching based on practition made by faculty members of professional and technical colleges in their employment areas; professional and technical colleges' sufficiency of their financial sources to renew themselves; and which skills of future planning are co-operated by professional and technical colleges and students' parents.

Professional and technical education in Turkey is of minor importance in comparison to basic education and do not receive the expected interest. Today, even members of professional and technical education have not been able to reveal the theoretical aspect of professional and technical teaching. Furthermore, in our country professional education is neglected, meaning that the researches for an individual to improve his/her sufficiency in business-life are not enoughly undertaken (Alkan, Dogan, Sezgin: 1993,s.393).

Similar to every sector, innovations in professional education world, the variations and inventions in technologic areas have a considerable effect on professional education. It is a common fact that business world needs qualified staff and always has room for such people. That's why people who accomplish their education withing suitable contend and atmosphere are thought to become more succesful in their career. This success shows itself up as a re-evaluation with a high competing power which is international in various sectors of business world. Hence, such a progress is very important for a country to improve.

Recently, there occur considerable efforts on the phases of preparation for profession and getting to work in Turkey. However, technological education has not been able to reach the expected level. The main reason for that is the lack of teachers both in numbers and quality. In order to level up the technological education, a system should be constructed to train teachers for high schools and colleges. If universities do not pay enough attention to the matter, new generations will keep being unaware of technology in the computer age (Alkan, Dogan, Sezgin: 1996, s.405-406).

The main purpose in professional education should be the forming of a training staff which is both international and able to invent value that has high competing power. This purpose should include various areas. In Turkey, similar in developed countries, professional educating programmes are to be constructed for every group of people with taking notice of human sources, age, information and skill. This way, the accordance of people to the value-invention programme throughout the country and to the business world will be obtained. This accordance programme should be enriched-not only in professional but also in individual and social aspects, to construct environments in which people can renew and improve themselves at any time in their lives. Hence, a great step will be taken in reaching a public constitution that has high inner performance and not only consuming but also inventing high value potentials. So,the social constitution will grasp a dynamic environment that improves its inner performance continually and the expectations from human sources such as quarantying the future of the country will be achieved.(hamlin.cc.boun.edu.tr/oud/panel.html)

Despite from Turkey's having many kinds of professional and technical colleges, only %10 of the population is made to these colleges (secondary education schools). The total amount of the students from every kind of secondary education schools is %25 of the population including professional and technical college students (Basaran: 1996,s.93). Besides, there are a number of faculties which train teachers to the various areas of professional and technical education. But the needed amount of teachers has not been trained yet which results in a deficiency of qualified staff both in number and qualifications.

In EU countries with the same profession standarts, the member countries must already have trained the expected number of staff with similar qualifications from now on. According to this situation, a profession capability licence is valid in all countries that are members of the EU. This licence, given with the notice of common standarts, will enable the workers' and technicians' work and travel among the EU countries.

Rapid technologic advancements bring about some professions to set apart, some to vanquish and some new professions to occur. According to a belief, today's children will have to prepare themselves for non-heard professions of future. Researches in business life is getting mechanised day by day and they encounter some advancements called "automation". Automation is the main purpose to be dealt with carefully when training staff for business-life. Professions, industry and works of industry in industry are changing with a great speed as they have never been. Under these circumstances the criticisms towards the professional education programmes can be summed up as: "There occur considerable changes in professions before the professional education college attendants graduate from the department they were trained."(Alkan, Dogan, Sezgin: 1996,s.399-400) Also, the regional requirements, which are effective on development of professional and technical education, should be paid attention.

The professional and technical education in Turkey is financed by the government. It is witnessed that the government is preparing some editions to create financial support for professional and technical education in addition to general and supplementary budget. (Milli Egitim Bakanligi,2001).We see that the budget for the professional and technical education is insufficiently small even though this education is very expensive. It should be remembered that the financial cuts made in professional and technical education will occur as deficiencies in the quality of the products produced by the staff of these schools. This is because; in the professional and technical education tools and equipments are of ultimate importance. Most of the professionals and technical colleges use outdated tools and equipments because of insufficient budget. But, the rapid advancements in technology demands an updating of the tools in workshops all the time.

The decrease of the quality in professional and technical education, especially since 1985, has directed the Ministry of Education to find outer financial sources. According to the technical cooperation made with the governments of Germany, France and Japan, the loaning agreements done between Turkey and the World Bank aimed that the ateliers and the labaratories in the industrial technical education schools would be equipped according to the modern Technologies, the technical teachers would be taken to the education of foreign languages and to the education of profession both in the land and abroad and the edutaion programmes would be improved. In this sense, since 1985, six projects originated from outer financial source have been put into practice and with these projects about 170, 7 million USA dolar have been provided as income of outer source to the industrial technical education. The “Fund to Widen and Improve the Technical and Professional Education, Apprenticeship” that is found with the law numbered 3308 has an important place in financing of Professional and technical education.

Another important element in financing of the Professional and technical education are the incomes provided from the revolving funds of the schools and the institutions. In the Professional and technical schools, with the aim of helping students gain enough real work experiments, provide schools to be equipped with technological developments, introduce school and new Technologies to environment and the environment developed by this way, revolving fund is found in the Professional and technological schools with the law numbered 3423.

The business institutions in Turkey need the work power that adopt and comprehend the rapid technological developments in order to be able to complete in the bazaars both in national and international. The workers are the key factors to adopt quickly the new Technologies. Their quailifiedness on adopting is depending on their technological acknowledgement. New work power with high performance is an obligation for Turkey and Turkey’s future. In this sense, the need of quillified workpower in the Turkish industry and serving sector is an important problem from the point of the view of Turkish economy that is in the stuggle of gaining international power competence especially in the processes of EU and Customs Union and that tries to go beyond the borders of it.

Method

This work is designed according to the technic of qualitative research. The most important side of the qualitative researches is to try to understand what person does in the existing environment. In this kind of researches the opinions and the experiments of the individuals that are in the sample have great importance. Qualitative researches are closely related to many disciplines. Conditional research, interpretational research, action research and descriptive researches can be accepted as examples in this sense. (Yıldırım, şimşek: 2000, s.14-18) We selected qualitative research technic because of this reason

Universe

The universe of research is constituted from Erzurum city. Professional and Technical high schools, the tradesman and industrialists from the industry cite of Erzurum depending on Erzurum Chamber of Commerce, and the guardians of students.

Sample

Erzurum city is constituted from the central district; Teknik Lise ve Anadolu Teknik Lisesi, Ticaret Lisesi, Erzurum Kız Meslek Lisesi, Kazım Karabekir Meslek Lisesi, the thirty tradesmen and industrialists that are in the industry cite

depending on Chamber of Commerce and Industry, fifty two guardians who have students in Professional high schools.

Gathering And Evaluating The Data

By having interview with; 52 guardians who have students in Professional high schools, 30 tradesman and industrialists that are in the industry cite depending on Chamber of Commerce and Industry, Kazım Karabekir Meslek Lisesi, Ticaret Lisesi, Teknik Lise ve Anadolu Teknik Lisesi, Erzurum Kız Meslek Lisesi from the central district, we try to determine the relations between these schools and the areas of industry and to determine the general situation of our Professional and technical high schools by asking open questions in this research. The general number of the samples from these schools comprises of 140 students, 45 teachers and 10 administrators. Upon determining these sample events we have fixed what the related institutions and people do and should do in the schools.

The Findings And Comment

The technology education problems in Professional and technical education taken from thirty tradesmen and industrialists from industry cite depending on Chamber of Commerce and Industry:

- We do not have characteristics enough to do work with the Professional and technical schools that are in our city.

- The contribution cannot be provided to the students studying in the Professional and technical schools and institutions about having the experiences in worklife by studyin on work.
- There are almost no projects produced with the purpose of providing extra income to the personell of Professional and technical education.
- The sources from general budget for developing the existing situation to support the institutions and foundations are not at the level of those are in developed countries.
- The women do not get help reinforce their knowledge and capabilities about their professions and there are not any area to improve themselves in worklife or they are not preffered because of the possibility that these could be some problems.
- The physical opportunities of professionalş and technical schools are not sufficient and the people who have got wanted characteristics cannot be trained in these schools.
- The guardians of students are not made conscious of being afraid of their responsibilities.
- There are not flexible programmes designed according to the information that are concluded from close colloborations between Ministries of Industry and Technology and Ministry of Education.
- Informing both the industrialists, tradesmen and the teacher and the students periodically about the industrial development in foreign countries and to enable them to reach the magazines and other similar works published with this aim. Planning seminars, short, middle and long time courses that develop both (industrialists, tradesmen etc.) and the students and putting them into the Professional education programmes.
- Providing a mental education that cause students gain some capabilities like the desire of working together, deciding quickly, comprehending industrial processes and the characteristics of automation and putting them into the education programmes.
- Providing opportunitiy to gain industrial experience to teachers with the way of relation between school and industry.
- The regional and national characteristics always should be taken into consideration in yhe studies and plans.
- It is certain that there will be serious changes in the structures of professions because of the increase of relations with European Union in the following years. The analysis and classifications of profession structures should be made permanently and all the related people should be informed about the conclusions upon these studies.
- These datum above show us that; our schools are stil not interesting for our children, they do not have the structure enough harmonious to work with industrial areas, the related people who are the main elements of the education out of our children do not work enough to provide this harmony and especially the guardians leave these officials alone by not interesting in schools.

The problems of technology education in Professional and technical education taken from Teknik Lise and Anadolu Teknik Lise, Ticaret Lisesi, Erzurum Kız Meslek Lisesi, Kazım Karabekir Meslek Lisesi (10 administrators, 45 teachers and 140 students)

- ❑ We do not have the capabilities to work with industrialists and tradesmen.
- ❑ There is almost no shared Project made with industrialists and tradesmen.
- ❑ The equipments used in these schools are not similar to the ones used in industry.
- ❑ There is almost no Project made with the purpose of providing extra income to Professional and technical education.
- ❑ The sources from general budget for developing the existing situation to support the institutions and foundations are not at the level of those are in developed countries.
- ❑ There are not enough opportunities to provide industrial experience to our teachers working in our schools. there are not enough scientific publications and magazines published with the purpose of informing teachers and students about the developments that are out of country.
- ❑ There are not enough needed education equipments.
- ❑ Physical structure do not support the existing developments.
- ❑ There are not enough institutions and foundations that support the activities in our schools and try to make them do work and in addition to this there are not enough volunteer foundations .
- ❑ The foundations of industry and trade do not want to accept trainee with the worry of causing extra outcome.

The problems of technology education in Professional and technical education taken from 52 guardians who have got students in Professional and technical high schools in the central district of Erzurum:

- ❑ There are not enough institutions and foundations that support the activities in our schools and try to make them do work and in addition to this there are not enough volunteer foundations.
- ❑ There are not enough education equipments needed.
- ❑ The sources from general budget for developing the existing situation to support the institutions and foundations are not at the level of those are in developed countries.
- ❑ That student's; redirections to the programs convenient for the needs of the working life, with their interest and skills, are not being made in desired format.
- ❑ That professional and Technical High Schools do not have enough skill to make plans for the future with data.
- ❑ That the women do not take the essential precautions with the aim of making easy to find a job, strengthen their economic situation.
- ❑ Making the students acquire a wide technical knowledge and skill in a certain group of profession, in a way to fit in various Works.
- ❑ That the convenient programs cannot be prepared sufficiently in order to make the physically and mentally disabled ones to have a profession.
- ❑ That the students do not have the industrial practice done in a certain group of profession, containing various works.
- ❑ Contrary to the technological changes or the conditions of the profession education in establishments, it is the continuance of the existence problems of the education establishments.

According to the statistics, the problems of technological education in professional and technological education, taken from the 44 curators from Teknik Lise and Anadolu Teknik Lisesi, Ticaret Lisesi, Erzurum Kız Meslek Lisesi, Kazım Karabekir Meslek Lisesi in the center town of Erzurum province, are determined in that way. As it is understood here, it is necessary that we should create the environment in which we can give the technical and Professional education which is very important in terms of catching the era and make the schools and related establishments attractive that will affect our children and our schools positively.

Results

Problems of Technological Education in Technological and Professional Education and Exuces of These Applications:

The studies made in this part are dealt with as the professional and technical high schools and the relations in the manufacture and industrial area, the education environment of Professional and technical high schools, physical opportunities, the sufficiencies of the teaching staff in professional and technical high schools in gaining teaching and skill aimed at the practices in employment locations, the sufficiencies of the professional and technical high schools in the financial resources aimed at refreshing themselves, the abilities of Professional and technical high schools in making professional plans with the curators and practices outside schools.

1. The Professional and Technical High Schools and The Relations in The Manufacture and Industrial Area:

Manufacture and Industrial areas need experienced qualified personnels. What is going to provide this, is the schools giving Professional and technical education. The schools also need these fields. Because, this place will provide the working areas of the personnels to be cultivated in these areas. Besides, students will gain various proficiencies as comprehending the features of automation, understanding the industrial progressions, deciding properly and quickly, and the wish to work together in these areas, by undergoing training. Schools, too will make an effort in order to cause the students gain wide technical knowledge and skills in the way that it can suit various works in a certain profession group, by considering the activities of these fields. The school must provide, by the way of industrial relations, the possibility of gaining industrial experience for the teachers, as well. The relation of these two establishments, in terms of refreshing and cultivating one another, will provide the teacher and the students to be aware of the industrial developments outside the country.

2. The Educational Environment of The Professional and Technical High Schools:

The role of the physical environment of the school, teachers and the equipment that the school have, is great in the education and cultivation of the students. In the school and the classroom, it is needed to create every kind of media providing the cultivation of the children. Furthermore, the teachers should provide their redirections according to the children's will and skills. Economical support is needed to create these medias. While the physical construction of the school is formed, the environmental factors should be considered, and multi-purpose classrooms should be created. These medias to be created, while having the future to be able to satisfy the current needs, also should be open to the innovations. Therefore the medias to be arranged, according to the information that will be obtained at the end of the firm cooperation of the employers and the Ministry of Education, Ministries of Labour, Industry and Technology, should be created and the activities should be sustained according to the joint programs to be arranged. Nevertheless, the environments in which the activities will be held should be arranged in the way that it will not give harm to the children's health and these environments should be made attractive to the children and should be endeared.

3. The Sufficiencies of The Teaching Staff in Professional and Technical High Schools in Gaining Teaching and Skills Aimed at the Practices in Employment Locations:

In Education, it is inevitable that the new teaching and the technics providing the productivity and the efficiency will be developed. (Yalın, 2003, Si 82-90.) The technology at the present day and the one to come is needed to be gone through carefully so that the education, that must be given in this, can be given by the best method. (Usun: 2000, S. 43.) In the field of education, as a result of the quick increase of the student's number, the lack of teachers accrued in the proportioning of the teacher/students, the quick increase of the quantity of the knowledge that must be taught to the individuals, some problems have emerged. Besides, that the teacher cannot refresh himself and follow the innovations sufficiently, on the other hand the steady increase of the will for education, the will of the individuals to make much more increase of the facilities of education, has become a problem. (Usuni: 2004, S. 35.) It has been observed that many teachers and training managers are not sufficient in using the technological equipment. (Turan, 2002, S. 279-280) In order to dispel these problems, the facility should be provided to the teachers and the managers taking place in the Professional and technological education so that they can refresh themselves and whatever needed for this should be done.

4. The sufficiencies of The Professional and Technical High Schools in The Financial Resources Aimed at Refreshing Themselves:

As the resources parted for the Professional and technical high schools' education is not sufficient, it is needed that the resources parted from the budget should be increased in such a proportion that it can reach the level of the developed countries, the domestic resources (trade associations, civil governments, special provincial administrations cooperatives, public contributions) should be triggered. Besides, it is needed that the facilities of free boarding and the government given scholarship whose number is scarce, should be increased, the establishments and Professional

unions should give scholarship for the professional and technical education,the number of the voluntary establishments supporting the Professional and technical education should be activated.(yayim.meb.gov.tr/yayimlara7155-156/scetin.htm)

5.The Abilities of Professional and Technical High Schools in Making Prudential Plans With the Curators:

The curators have the responsibilities for the works in schools.These responsibilities involves being able to make use of the sophisticated curators.In this context,the curators available in industry and doing a profession as a tradesman,doing instructiveness in the works of students,taking part in the works of students by doing instructiveness,by joining the organisations in the school and outside the school,they would be supporting the children's education both physically and intangibly as a participant.

Suggestions

- ❑ The students should be directed to the programs convenient for the business life in accordance with their interest and skills.
- ❑ He should make long, middle and short predictions about professional and technical developments and reflect these in professional education programs.Opinions of industrialists, tradesmen, employers and trainers should be taken, in accordance with the wills of the sides, these programs should be created.
- ❑ To trigger the domestic resources (trade associations, civil governments, special provincial administration unions, various industry establishments, and public and curators contributions) should be provided, and the resources parted from the budget should be increased in such a proportion that it can reach the level of the developed countries.
- ❑ Precautions, aimed at to dipsele the consistence problems emerged between the education institutions and the establishments, should be taken.
- ❑ The studies made other countries should be followed closely, and the innovations made about the technology and labour force qualifications should be taken instantly.
- ❑ The education programs should be restructured in the light of aim, scope and the other qualifications, considering the Professional standards.
- ❑ The school should not be left alone about the education of our children; curators, industrialists, tradesmen and the civil governments should support them and take place somehow in the activities to be arranged.
- ❑ Symposiums and activities, aimed at to give wide information about the environment in which the school is present, for the teachers and the school managers, should be arranged.

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