

Full Length Research Paper

A field study to determine the satisfaction levels of the candidate teachers attending the machine drawing and construction program at the faculty of technical education in Turkey

Şenol Okay^{1*} and İsmail Şahin²

¹Department of Machine Education, Technical Education Faculty, Pamukkale University, Kinikli, Denizli 20100, Turkey.

²Department of Machine Education, Technical Education Faculty, Gazi University, Besevler, Ankara, Turkey.

Accepted 22 December, 2009

The purpose of this study is to determine the satisfaction levels of the students studying at technical education faculties to become Machine Drawing and Construction teachers. The study has been devised as a survey and its scope consists of candidate teachers attending the machine drawing and construction education program of the technical education faculty of seven universities in Turkey. Sampling has been done among randomly chosen 319 students studying in the machine drawing and construction program at the Faculty of Technical Education (FTE). The findings obtained in the study have revealed that the satisfaction levels of the students regarding the administration of their faculties, social activities in their faculties, educational activities and applied studies are at a medium level. Moreover, it has been found out that although the opinions concerning the school and the reason for choosing the department show significant discrepancies at certain levels, no such discrepancies have been revealed according to the high schools that the students have graduated from. In the study, following the evaluation of the tables drawn as a result of the analysis, some implications and suggestions have been offered.

Key words: Machine drawing and construction candidate teachers, satisfaction level, technical education faculty.

INTRODUCTION

With the global economic crisis that has been going on for some time, today, the whole world has been looking for ways to get out of this crisis and governments have been seeking remedies to get over it with minimum damage. In our country, too, there has been an increase in the unemployment rate due to the economic shrinkage that has been continuing in employment. (13%) (Turkish Statistics Institute, 2009). Alvin Toffler, in his book "The Third Wave", makes a classification of the global Industrial development and states that property of land in the agricultural societies that make up the first wave and

capital accumulation in the industrial societies that make up the second wave are the two important factors of success. He notes that the most important factor in the information society that makes up the third wave will be the quality of the human capital (Toffler, 1981).

In today's informatics age, where technology develops rapidly, qualified human force (human capital) is the most significant factor in an arena where there is fierce competition among countries. It must be one of the main goals of the educational systems of these countries to educate individuals that can meet the current requirements of economy and technology, that can make innovations and that can adapt to ongoing developments. This situation shows how important vocational and technical education actually is.

Increasing competitive force by adapting to information society and technological developments and training

*Corresponding author. E-mail: senolokay@gmail.com, senolokay@yahoo.com. Tel: +90 258 296 30 67. Fax: +90 258 296 32 63.

labor force with the qualifications required by the labor market so as to reduce unemployment have steadily been gaining importance. Industrial corporations present such qualifications as knowledge and skills in production and keeping close track of technology as their basic requirements to be known beforehand (Binici and Ari, 2004). It can be stated that the basic method to realize this is to provide vocational and technical education to train this labor force.

Vocational education is a process in which the individual obtains certain knowledge, skills and work habits and expands his or her talents and abilities; on the other hand, technical education is a process which requires advanced scientific and mathematical knowledge as well as applied technical skills, and which develops the knowledge, skills and work habits required for a position at a level between a qualified worker and an engineer (Sezgin, 2000). In Western countries, vocational education is described as a process which aims at providing a career through artisanship or practical activities (Öçal, 2008). However, the goal of vocational technical education is generally to educate and train workforce to enable them to become qualified enough to be employed in industrial, commercial and service sectors, and to give them the basic education they need to transfer to a department to continue their vocational education at a university level (Eşme, 2007). Vocational and technical education system is responsible for preparing human resources for the production system, as a result of which human capital that takes on a locomotive role in progress and development has been trained (Özgüven, 2001).

UNESCO (1999) points out to the fact that in order to receive the desired outcome from vocational and technical education, it is necessary that it should be compatible with the social values and attitudes, encompass new technology, promise new policies and financial benefits and should take into consideration local, regional and global opportunities and interests.

At present, vocational technical education is being provided at a high school and university level. While the purpose at the high school level is to meet the needs of intermediary staff in vocational high schools and technical high schools, it is to educate technical and vocational candidate teachers in technical education faculties and vocational education faculties at a higher education level. In addition to this, apprenticeship and vocational education is also provided for those who start working after elementary school (Şahin et. al., 2007). The 16th National Education Council has assembled in order to discuss the problems as regards vocational and technical education and propose some solutions to these problems. It has been decided at this meeting that the vocational and technical education in this country will be restructured within the framework of elementary education (Ministry of Education, 2009). Universities play an important role in a society's economic, social, cultural, scientific, technological, ethical and intellectual development (Gençyılmaz

and Zaim, 1999). The ultimate goals of universities should be to contribute to their students' education in the best way they can and to maintain student satisfaction with the education they provide (Yenen and Gözlü, 2003, Taşçı, 1995; Eroğlu, 2002). Students who are satisfied with the facilities and opportunities provided by their universities show regular attendance and higher graduate rates (Student Life Studies, 1999). Elliot and Shin (2002) assert that taking into consideration student satisfaction, expectations and wishes will provide multitudinal benefits to these institutions.

Recently, parallel to the decline in the rate of students who prefer to study at vocational high schools, the Ministry of Education has been allotting either very low or no contingency for technical teachers to work at these schools. In the program where the study has been conducted there has been no employment of technical teachers for a long time. Although such teachers are not employed, in newly opened FTEs the education gets started and new graduates enter the arena on top of the old ones. Those candidate technical teachers that cannot be employed by the Ministry of Education look for job opportunities in the industrial sector. Such problems experienced upon graduation have adverse effects on students' success and motivation. This study aims at determining the factors affecting students' satisfaction level and at assisting in their being considered for any modifications or innovations that are necessary.

MATERIALS AND METHODS

Research goals

The purpose of this study is to determine the satisfaction level of the students attending the machine drawing and construction education program at the faculty of technical education. In line with the general aim of the study, the following problems have also been addressed:

- Do the satisfaction levels of the students vary according to gender?
- Do the satisfaction levels of the students vary according to the university they are attending?
- Do the satisfaction levels of the students vary according to the high school they have graduated from?
- Do the satisfaction levels of the students vary according to the reason why they have chosen the program they are attending currently?

Methodology and data analysis

The study has been carried out as a survey. The subjects of the study consist of 319 senior students attending the machine drawing and construction program in the 2008-2009 academic year at the Faculty of Technical Education at Afyon Kocatepe University, Gazi University, Duzce University, Suleyman Demirel University and Karabuk University. Although all these education programs, where the survey was conducted, provide the same education as regards the content, the programs at Karabuk University, Mersin University FTE in Tarsus, Marmara University, Suleyman Demirel University and Duzce University are called Design and Construction Edu-

cation whereas the ones at Afyon Kocatepe University and Gazi University are called Machine Drawing and Construction Education (The Student Selection and Placement Center, 2009).

The data in this survey have been collected by a measuring scale developed by the researchers. To this end, first, the researchers have looked into some literature related to the issue and interviewed students attending the department of machine construction and drawing. The study has been carried out on a voluntary basis. The scale used in Erdoğan and Uşak's (2005) study has been made use of in order to create the items on the scale. Following this, a draft scale consisting of 41 items has been prepared, and some expert opinion has been sought for regarding this scale, after which necessary changes and editing have been made to the items on the scale. The preliminary application of the scale has been carried out on 148 students from the department of automotive technology. Factor analysis has been made to check the validity of the scale and Cronbach's Alpha internal consistency coefficient has been calculated to check the reliability of the scale. The data collected through the questionnaires have been analyzed using SPSS 12.0 (SPSS, Inc., Chicago, Illinois). In order to evaluate the findings obtained from the responses, frequency,

mean (\bar{X}), and standard deviation (S.D.) have been made use of. In the study, to determine the level of deference of satisfaction levels of the students according to their genders, independent groups t-test analysis has been used. Moreover, to determine whether there are any discrepancies among the satisfaction levels of the students according to the university they are attending, the high schools they have graduated from and the reasons why they have chosen this program, one-way analysis of variance (ANOVA) has been carried out. In order to determine which possible discrepancies occur among which groups, Tukey-HSD Test has been used. The significance level has been taken as $p < .05$ to test the difference levels among groups. A five-degree preference scale has been used in responses to the items on the data collection material. The range of the responses has been designed as follows: (1-strongly disagree, 2- disagree, 3-neither agree nor disagree, 4-agree, 5-strongly agree). The distribution of scale ranges are: 1.00-1.80-none, 1.81-2.60-a little, 2.61-3.40-a reasonable amount 3.41-4.20- a great deal, 4.21-5.00-complete (Tekin, 1993).

Validity tests

For the survey, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, a test to assess the appropriateness of using descriptive factor analysis on data, is 0.81. It is desirable that the KMO value be above 60% (Tabachnic and Fielda, 2001). Barlett test of sphericity ratio, which implies that significant factors can be drawn from the database, is ($p < .00$). These ratios show that the questionnaire form is valid (Hoxley, 2000, Mitchell, 1994). In order to test the validity of the questionnaire, varimax rotation has been used in the factor analysis of the 41 items. As a result, the intrinsic values of the items on the scale range from 7.45 to 25.09%. It has been noted that four factors explain 57.83% of the variation. There are seven items in the first factor which is composed of items related to the administration. Their factor loadings range from .36 to .58. There are four items in the second factor which consists of items related to social activities, and their factor loadings range from .44 to .59. The third factor which is related to educational activities includes 21 items, the factor loadings of which range from .33 to .67. Finally, in the fourth factor, which is related to applied studies, there are nine items with factor loadings ranging from .34 to .65.

Reliability tests

Cronbach's Alpha coefficients have been used to check the reli-

ability and internal consistency of the scale. Cronbach's Alpha tests the internal consistency and reliability of the scale when the discrepancies are measured (Cronbach, 2004). In the reliability study carried out, the Cronbach's Alpha coefficient regarding the first factor, the administration aspect, has been calculated as .81. The total item correlations are between .46 and .61. While the Cronbach's Alpha coefficient concerning the second factor (social activities) has been calculated as .74, the total item correlations have been found to be ranging from .51 to .65. The Cronbach's Alpha coefficient of the third factor (educational facilities) has been calculated as .85, and the total item correlations range from .33 to .67. The Cronbach's Alpha coefficient of the fourth factor (applied studies) has been calculated as .87, and the total item correlations have been found to range from .50 to .68. For the whole scale, the Cronbach's Alpha coefficient has been calculated as .91, and the total correlation of the items have been found to range from .32 to .64. According to this, it can be stated that the measurements obtained from the scale in the preliminary application have yielded quite reliable results. ($0.60 \leq \alpha < 0.80$ the scale is quite reliable; $0.80 \leq \alpha < 1.00$ the scale is highly reliable) (Özdamar, 2002). According to the Hotelling T2 test, which is used to test the hypothesis whether the means of the questions are equal to each other, the hypothesis stating that "means of the questions are equal to each other" is rejected ($p < 0.05$). Therefore, it can be said that the difficulty level of the questions are different from each other, which is a desirable characteristic. The results have been presented in Table 1.

RESULTS AND DISCUSSIONS

Demographic profiles of respondents

The demographic profiles of the subjects can be seen in Table 2. Of the students who participated in the survey, 25.7% are from Gazi University, 21.% are from Afyon Kocatepe University, 20% are from Karabuk University, 16.3% are from Duzce University and 16% are from Suleyman Demirel University. When the numbers and the percentages of the participants studying at the automotive department at the faculty of technical education are taken into consideration, it can be said that there is quite an even distribution. When the high schools that the participants have graduated from are examined, it can be observed that approximately 59% are graduates of schools giving vocational and technical education and 41% are graduates of general high schools. Considering the fact that students from all types of high schools can choose to go to FTEs, it can be clearly seen that the percentage of graduates of general high schools who choose to attend this department is significantly high. Taking into consideration the fact that there exists a program at this department directed towards the enhancement of the knowledge and skills learned in vocational high schools, students coming from normal high schools can encounter some problems especially in vocational courses. When the reasons why students have chosen this department are examined, it can be seen that 52.4 % of the students have made compulsory choices as to attend this program because of the University exam system and their university placement exam points. Consequently, this is an important matter which may

Table 1. Hotelling's T-Squared Test.

Hotelling's T-Squared	F	df1	df2	Significant
621.595	11.417	40	108	.000

Table 2. Demographic information of students (N=319).

Variables		Frequency	Percentage
Universities	Afyon K.T. University	69	21.6
	Gazi University	82	25.7
	Suleyman Demirel University	51	16.0
	Karabuk University	65	20.4
	Duzce University	52	16.3
Total		319	100.0
Gender	Male	216	67.7
	Female	103	32.3
Total		319	100.0
Level of Education	High school	130	40.8
	Vocational school	80	25.1
	Technical high school	45	14.1
	Anadolu technical high school	64	20.1
Total		319	100.0
Reason for prefer of program	Guidance (Family or School)	56	17.6
	To be a technical teacher	34	10.7
	To take vocational training	62	19.4
	ÖSS score (Coefficient effect)	167	52.4
Total		319	100.0

influence the satisfaction level of the students attending the department.

In this section, opinions of the participants concerning the sub dimensions of the scale and findings of ANOVA regarding the discrepancies among the opinions are presented.

Findings regarding the participants' opinions concerning the sub dimensions of the scale

Table 3 shows students' assessments of their satisfaction level related to the administration in their faculties. When the findings in Table 3 are examined, it can be observed that students do not have an opinion of the school administration in general; (\bar{X} =2.97). According to the table, the item which has received the highest "I agree" opinion is "professors and students can interact easily" (\bar{X} =3.47). The item with which the students have agreed the least is "In my faculty, my opinions are taken into consideration and are made use of" (\bar{X} =2.49); they have marked "I disagree" for this statement.

Table 4 shows students' assessments of their satisfaction level related to the social activities in their faculties. When the findings in Table 4 are examined, it can be observed that students' satisfaction level related to the social activities at school is quite low (\bar{X} =2.20). According to the table, students have marked "disagree" for the following two items: "In my faculty, I have the opportunity to join the sports activities I'm interested in" (\bar{X} =2.25) and "student representative of the department is effective in defending the rights of the students" (\bar{X} =2.22).

Table 5 shows students' assessments of their satisfaction level related to the education they are receiving in their faculties. When the findings in Table 5 are examined, it can be observed that the students generally have no opinion of the education they receive in their faculties. (\bar{X} =2.98) According to the table, students have marked "agree" for the following three items: "If there is something I do not understand, I can easily ask it to my professors" (\bar{X} =3.56), "I believe that what I learn at the faculty will be beneficial to me now and in the future" (\bar{X} =3.47), "I am content with the physical condi-

Table 3. Opinions about their satisfaction level related to the faculty administration of students.

Opinions	N	Mean	S.D.	S.E.
When students need to talk with the faculty administration, can meet unconstrained.	319	3.14	1.29	.07
To solve any the problems submitted to the faculty administration are shown efforts.	319	2.86	1.11	.06
Professors and students can meet easily	319	3.47	1.11	.06
Commute of Faculty student affairs gives adequate support on my problems	319	2.82	1.21	.06
Communication with students of Department management is satisfactory.	319	3.10	1.15	.06
I feel that I belong to the Faculty of Technical Education	319	2.96	1.31	.07
My opinions are taken into consideration and are made use in my faculty.	319	2.49	1.12	.06
Total	319	2.97	1.18	.06

Table 4. Opinions regarding their satisfaction level related to the social activities of students.

Opinions	N	Mean	S.D.	S.E.
I have the opportunity to join the sports activities which interest's me in my faculty.	319	2.25	1.15	.06
Faculty of Physical facilities are enough to (canteen, indoor facility etc.) meet to my demands.	319	2.15	1.18	.06
Social and cultural activities are sufficient in my faculty.	319	2.19	1.10	.06
Student representative of the department is effective in defending the rights of the students.	319	2.22	1.14	.06
Total	319	2.20	1.14	.06

tions in which the lessons are carried out (cleanliness, comfort, appearance, etc.) ($\bar{X}=3.42$).

Students have marked "disagree" for the following three items: "If I were given a chance, I would choose this faculty again" ($\bar{X}=2.36$), "Exam questions and assessments made measure my true performance." ($\bar{X}=2.55$) And "E6" ($X=2.50$). As regards the equipment, tools and devices in the faculties, it seems that student satisfaction is very low.

Table 6 shows students' assessments of their satisfaction level related to the applied studies in their faculties. When the findings in Table 6 are examined, it can be observed that the students generally have no opinion of the application studies they receive in their faculties ($\bar{X}=2.88$). It can be said that except for only one item, students seem to be without an opinion about all the other items in the questionnaire, which implies that student satisfaction as regards applied studies in the faculties is at a medium level. Students have disagreed with the item "Technology used in the workshops is in tune with the age of technology" ($\bar{X}=2.57$) and agreed with the following items: "Instructors have sufficient knowledge of applications" ($\bar{X}=3.24$), "Instructors provide students with sufficient theoretical information on applications" ($\bar{X}=3.05$) and "Applications in the workshops have been chosen to represent real life circumstances" ($\bar{X}=3.03$). In the light of the responses, it can be

understood that student satisfaction regarding current applications is low. The fact that there is insufficient technological equipment in FTEs, where education is given both in theory and practice, causes students to graduate with a lack of adequate practice.

Findings as to whether students' opinions about the sub dimensions of the satisfaction scale differ according to their genders.

Table 7 displays whether students' opinions related to the sub dimensions of the student satisfaction scale differ according to their genders.

When the findings in Table 7 are examined, sub dimensions of "Administration" [$t(317)=-2.265$; $p<.05$], "Social activities" [$t(317)=-2.031$; $p<.05$] and "Applied studies" [$t(317)=-3.170$; $p<.05$] show significant discrepancies whereas no such difference has been found in "educational facilities" [$t(317)=-.993$; $p<.05$] sub dimension. The significant discrepancies that have emerged have occurred in favour of women. It has been found out that the satisfaction level of female students is higher regarding the administration, social activities and applied studies when compared to male students. It can be said that male students' expectation levels of satisfaction are higher than those of female students. No difference has been found between the genders in their evaluation of the

Table 5. Opinions regarding their satisfaction level related to the training-teaching activities of students.

Opinions	N	Mean	S.D.	S.E.
Courses are performed suitable with our level	319	3.12	1.05	.05
I believe that what I learn at the faculty will be beneficial to me now or in the future	319	3.47	1.09	.06
If I were given a chance, I would choose this faculty again.	319	2.36	1.21	.06
I think that theoretical knowledge's acquired in the Faculty would work in practice	319	3.39	1.07	.05
Course content is organized to attract my attention	319	2.75	1.03	.07
If there's something I do not understand, I would easily ask it my professors.	319	3.56	1.14	.06
Course materials and equipments are used appropriate to the issue	319	3.02	1.08	.06
Sufficient tool and device is existed in the classes, laboratories and workshops	319	2.60	1.09	.06
Assessments of exam and questions are made to measure my true performance	319	2.55	1.03	.05
I want to to receive master of science training in this department	319	3.00	1.37	.07
I am content with the physical conditions in which the lessons are carried out (cleanliness, comfort, appearance, etc.)	319	3.42	1.17	.06
I can easily reach related resources course	319	3.26	.97	.05
I recommend to my acquaintances the department.	319	3.05	1.27	.07
Given at the department of education is appropriate in my future goals	319	3.05	1.13	.06
I'm getting adequate counselling services from my consultant	319	2.57	1.22	.06
Computer services provided by my faculty meets my needs.	319	2.91	1.23	.06
Faculty library is enough for my expectances	319	3.01	1.27	.07
Diversity of the courses given within the program is satisfactory level	319	3.19	1.02	.06
The number of elective courses given within the program is sufficient.	319	2.65	1.17	.06
Teaching method of the courses of the teaching staff is satisfactory.	319	2.81	1.02	.05
I think that professions of teaching formation courses are useful	319	2.87	1.34	.07
Total	319	2.98	1.14	.06

Table 6. Opinions regarding their satisfaction level related to the applied studies of students

Opinions	N	Mean	S.D	S.E.
Given the application of theoretical knowledge (experiments, projects, assignments, etc.. methods) is made in the practical courses.	319	2.87	1.25	.07
Technology used in the workshops is proper the age of technology.	319	2.57	1.07	.06
Instructors have sufficient knowledge of about applications.	319	3.24	.97	.05
Instructors of workshop courses gives practical courses perceptible	319	3.10	1.03	.05
Applications in the workshop have been chosen to represent real life circumstances	319	3.03	1.07	.05
Technology in the workshops is used effectively.	319	2.61	1.05	.05
Tools and materials which are used workshop are sufficient.	319	2.72	1.09	.06
Instructors provide students with sufficient theoretical information on applications	319	3.05	1.03	.05
Theoretical information in the courses is adapted application in the workshops	319	2.73	1.11	.06
Total	319	2.88	1.07	.05

educational facilities in their faculties.

Findings as to whether students' opinions about the sub dimensions of the satisfaction scale differ according to the university they are attending

Table 8 displays the findings as to whether students'

opinions of the sub dimensions of the scale differ according to the university being attended.

Significant discrepancies have been found in the evaluation of the students for all the sub dimensions of the satisfaction scale in terms of the university variable. As a result of the ANOVA analysis, it has been discovered that there is a difference among the opinions of the students regarding their levels of satisfaction related to the

Table 7. Results of t-test according to their differ genders of opinions related to the sub dimensions of the students satisfaction scale.

Items	Gender	N	Mean	S.D.	t	Sig.
Administration	Male	216	2.90	.84	-2.265	.024*
	Female	103	3.13	.81		
Social activities	Male	216	2.14	.82	-2.031	.043*
	Female	103	2.35	.96		
Training–teaching activities	Male	216	2.96	.60	-.993	.321
	Female	103	3.03	.55		
Application studies	Male	216	2.79	.69	-3.170	.002*
	Female	103	3.07	.84		

*The mean difference is significant at the .05 level.

Table 8. Findings as to whether students' opinions about the sub dimensions of the satisfaction scale differ according to the university they are attending.

Scales	Universities	N	Mean	S.D.	F	Sig.	Difference Tukey-Hsd
Administration	Afyon K.T. University	69	2.15	.76	32.573	.000*	(2-1, 3-1, 4-1, 5-1)
	Gazi University	82	3.37	.66			
	S.D. University	51	3.03	.61			
	Karabuk University	65	3.27	.69			
	Duzce University	52	3.03	.79			
	Total	319	2.97	.70			
Social activity	Afyon K.T. University	69	1.93	.87	4.911	.001*	(3-1, 4-1, 3-5)
	Gazi University	82	2.18	.77			
	S.D. University	51	2.57	.88			
	Karabuk University	65	2.35	.90			
	Duzce University	52	2.07	.86			
	Total	319	2.22	.85			
Training–teaching activities	Afyon K.T. University	69	2.60	.55	11.736	.000*	(2-1, 3-1, 4-1, 5-1)
	Gazi University	82	3.19	.51			
	S.D. University	51	3.02	.65			
	Karabuk University	65	3.10	.50			
	Duzce University	52	2.97	.56			
	Total	319	2.97	.55			
Application studies	Afyon K.T. University	69	2.47	.75	14.671	.000*	(2-1, 4-1, 5-1, 4-2, 4-3)
	Gazi University	82	2.87	.61			
	S.D. University	51	2.70	.75			
	Karabuk University	65	3.35	.58			
	Duzce University	52	3.03	.81			
	Total	319	2.88	.70			

1. Afyon KT. University 2. Gazi. University 3. Isparta S.D. University 4. Karabuk University 5. Duzce University

*The mean difference is significant at the .05 level.

administration sub division on the scale depending on the university they are attending ($F_{(4:314)}=32.573$, $p<.05$). In order to determine among which groups this difference has occurred, Tukey-HSD multiple comparison test has been applied. According to the results of this test and the arithmetic means in the table, the satisfaction levels of

the students at Gazi University and Karabuk University regarding the administration are higher than those attending Afyon Kocatepe University, Duzce University and Suleyman Demirel University.

As a result of the ANOVA analysis, it has been discovered that there is a significant difference ($F_{(4:314)}=4.911$,

$p < .05$) among the opinions of the students regarding their level of satisfaction related to the second sub division of the scale, social activities, according to the university they are attending. According to the results of the Tukey-HSD test there are significant discrepancies among the students attending Karabuk University, Suleyman Demirel University and Afyon Kocatepe University. It can be noted that regarding social activities, the satisfaction level of the students attending Karabuk University and Suleyman Demirel University are higher than that of the students attending Afyon Kocatepe University. On the other hand, there is also a significant difference between the satisfaction levels of the students attending Suleyman Demirel University and Duzce University. In terms of social activities, the satisfaction level of the students attending Duzce University is low.

As can be seen in the table, depending on the university they are attending, the satisfaction levels of the automotive students show significant discrepancies in terms of the educational facilities in their faculties ($F_{(4:314)}=11.736$, $p < .05$). According to the results of the Tukey-HSD test, there is a significant difference between Afyon K. University and the other universities taking part in the study. It has been discovered that the satisfaction level of the students attending Afyon K. University is lower than that of the students attending Gazi University, Isparta SD University, Karabuk University and Duzce University.

Significant discrepancies have been found as a result of the ANOVA test, carried out to determine whether the satisfaction levels of the students regarding the educational activities vary depending on the university they are attending ($F_{(4:314)}=14.6713$, $p < .05$). According to the results of the Tukey-HSD test, as regards the applied studies in their faculties, the satisfaction levels of the students attending Gazi University, Karabuk University, and Duzce University are higher than those of the students attending Afyon K. University. On the other hand, the satisfaction level of the students regarding applied studies at Karabuk University is higher than that of the students attending Gazi University and Isparta SD University. Thus, the university that is being attended is so effective a factor as to create significant discrepancies among the satisfaction levels of students in terms of administration, social activities, educational facilities and applied studies.

Findings as to whether students' opinions about the sub dimensions of the satisfaction scale differ according to the high school they have graduated from

As can be seen in Table 9, no significant discrepancies have been found as a result of the ANOVA test in the four sub divisions of the satisfaction scale among the opinions

of the students depending on the high school they have graduated from. Those students who have graduated from Anatolian technical high schools have a higher satisfaction level regarding administration as opposed to those who have graduated from other high schools ($\bar{X}=3.06$). In terms of social activities, the satisfaction level of vocational high school graduates is higher than that of the others ($\bar{X}=2.27$). As regards educational facilities, the satisfaction level of general high school graduates is higher than that of the others and as for applied studies; the satisfaction level of vocational high school graduates is higher than that of the others. In the light of these results, it can be concluded that the high school from which a student has graduated does not play a significant role in the satisfaction level of the student concerning the program he or she is attending.

Findings as to whether students' opinions about the sub divisions of the satisfaction scale differ according to the reason why they have chosen the program they are attending

According to the results of the ANOVA analysis in Table 10, it can be seen that there is a significant difference among the students' opinions of their level of satisfaction regarding educational facilities depending on the reason why they have chosen the program they are attending. However, no significant discrepancies have been found in terms of administration, social activities and applied studies according to the reason why they have chosen the program they are attending. According to Tukey-HSD test, which has been carried out to determine among which groups there are significant discrepancies, the groups with discrepancies have been identified as the students who have chosen the program to become technical teachers, students who have chosen it through guidance, those who have chosen it because of the coefficient and those who have chosen it to receive vocational education. The students who have chosen the program to become technical teachers have a higher satisfaction level as regards the educational facilities when compared to those who have chosen it with the guidance of their families. The satisfaction level of those students who have chosen the program to receive vocational education is also higher than that of the students who have chosen it because of their coefficient. Consequently, it can be concluded that the reason why a student chooses a program is an effective variable on the satisfaction level of the students regarding educational facilities.

Conclusions

It has been seen that the satisfaction level of the students

Table 9. Findings as to whether students' opinions about the sub dimensions of the satisfaction scale differ according to the high school they have graduated from.

Scales	Graduated high school	N	Mean	S.D.	F	Sig.
Administration	High school	130	2.99	.83	.747	.525
	Vocational school	80	2.98	.79		
	Anadolu technical high school	64	3.06	.82		
	Technical high school	45	2.82	.95		
	Total	319	2.97	.84		
Social activities	High school	130	2.21	.83	.441	.724
	Vocational school	80	2.27	.85		
	Anadolu technical high school	64	2.10	.90		
	Technical high school	45	2.21	1.00		
	Total	319	2.19	0.89		
Training-teaching activities	High school	130	3.03	.55	1.282	.281
	Vocational school	80	3.01	.66		
	Anadolu technical high school	64	2.93	.57		
	Technical high school	45	2.85	.56		
	Total	319	2.95	.58		
Application studies	High school	130	2.90	.76	.382	.766
	Vocational school	80	2.93	.75		
	Anadolu technical high school	64	2.81	.71		
	Technical high school	45	2.83	.80		
	Total	319	2.86	.75		

1. High school 2. Vocational school 3. Anadolu technical high school 4. Technical high school

* The mean difference is significant at the .05 level.

Table 10. Findings as to whether students' opinions about the sub divisions of the satisfaction scale differ according to the reason why they have chosen the program they are attending.

Scales	Reason for preference to department	N	Mean	S.D.	F	Sig.	Difference Tukey-Hsd
Administration	Guidance (Family or School)	56	3.01	.82	.677	.567	
	To be a technical teacher	34	3.10	.88			
	To take vocational training	62	3.04	.86			
	OSS score (Coefficient effect)	167	2.92	.82			
	Total	319	3.01	.84			
Social activities	Guidance (Family or School)	56	2.17	.85	.704	.550	
	To be a technical teacher	34	2.41	.85			
	To take vocational training	62	2.20	.87			
	OSS score (Coefficient effect)	167	2.17	.88			
	Total	319	2.23	.86			
Training-teaching activities	Guidance (Family or School)	56	3.03	.56	4.120	.007*	(2-1, 3-4)
	To be a technical teacher	34	3.17	.74			
	To take vocational training	62	3.12	.58			
	OSS score (Coefficient effect)	167	2.88	.54			
	Total	319	3.05	.60			
Application studies	Guidance (Family or School)	56	2.92	.71	.174	.914	
	To be a technical teacher	34	2.92	.79			
	To take vocational training	62	2.89	.71			
	OSS score (Coefficient effect)	167	2.85	.78			
	Total	319	2.89	.74			

1. Guidance. 2. To be a technical teacher 3. To take vocational training 4. OSS score

* The mean difference is significant at the .05 level.

regarding the faculty administration is at a medium level. The rate of making use of students' opinions in the faculties is very low. It can be concluded that the fact that students cannot share their expectations and suggestions with the administration is an important element affecting their feelings of "belonging". This is revealed by the fact that the level of attachment to the faculty is medium level according to students' responses. In contrast to their dissatisfaction with the administration, the students seem to have a high level of satisfaction as regards communication they have with the professors. In a study conducted by Yeşilyaprak et.al. (2001), it has also been found out that vocational education faculty students, similarly, have a low satisfaction level regarding the administration. The faculty needs to enhance the opportunities of communication with students to increase the satisfaction level of the students. They have to be in constant contact with the student representatives so as to learn about the expectations and the wishes of the students. Those which can be realized should be addressed in order to try to increase the satisfaction level of the students.

It has been found out that the satisfaction level of the students regarding the social activities in their faculties is quite low. Apart from Gazi University, considering the fact that the other universities have been newly opened, it can be said that they have not become institutionalized yet. Parallel to the fact that the university campuses are still in the process of physical development, social facilities offered to students are limited.

As for the educational activities, students seem to be indecisive about their satisfaction level. It has been noted that laboratories and workshops have insufficient equipment. Except for Gazi University, it can be presumed that this situation has occurred due to the fact that these universities have started to provide education relatively new. Despite these drawbacks, students express that they can easily communicate with their professors. It can be concluded that although there is a lack of equipment, academics increase the student satisfaction level with their dedicated work. Lamport (1993) and Wilson and Gaff (1975) have pointed out that friends and academic personnel have a great impact on student satisfaction. In general, as a result of the assessment, student agreement on the opinions stating that they would choose the same faculty again or they would recommend it to their close relatives is low, which is a clear sign of their satisfaction level. The reasons leading to this result could be that they choose this faculty compulsorily; they receive wrong vocational guidance after elementary school or the facilities in the faculty or university are inadequate. Ekinçi and Burgaz (2007) in a study they have carried out at Hacettepe University, have found out that the students' satisfaction level regarding the education in the faculty is at a medium level. On the other hand, in a study carried out by Erdoğan et al. (2005), it has been found out that the level of satisfaction

is low.

The students seem to be indecisive about the application studies carried out in their faculties. Their satisfaction level concerning practical lessons given in the workshops appears to be at a medium level. It is known that in the curriculum followed by FTEs, not only theoretical information but also practical skills are also targeted. Therefore, in terms of the equipment available in labs and workshops, it is important that technology be followed closely. In a study they have conducted, Akpınar and Özer (2003) have stated that they have found the syllabus, program, application facilities and the instructors to be insufficient. It can be said that in an age where technology advances rapidly, faculties fail in updating their labs and workshops at such a great pace and fall behind industry. The majority of the graduates of this program start to work in the industrial sector as intermediary personnel because they cannot be appointed to teaching positions. This fact emphasizes once more that laboratories are of utmost importance in this field. Due to these reasons, the satisfaction level of the students regarding the applied studies has yielded low results.

In the program where the study was carried out, as regards the satisfaction level, significant discrepancies have been found in the three sub-levels (administration, social activities, and applied studies) depending on the gender of the students. In this evaluation, it has been observed that the satisfaction level of females is higher than that of the male students. No significant difference has been found in the evaluation of education. Both genders seem to have a common point of view.

It has been found out that the university that is being attended is an important variable in determining the satisfaction level of the students in terms of administration, social activities, educational facilities and applied studies. It can be said that the high school which a student has graduated from is not a significant factor in affecting student satisfaction of the program being attended. It can be stated that the reason why this program has been preferred is a significant factor affecting the student satisfaction regarding educational activities/facilities.

As a result of the findings obtained in this study, the following suggestions can be made:

- (i) After their elementary education, students should receive counseling and guidance in accordance with their abilities. Making the correct choice in their occupational preferences would increase the level of satisfaction they would get from their education.
- (ii) Students should be given informational guidance about professions in general before they make university preferences so that chances of wrong preferences are lowered.
- (iii) To meet students' expectations and wishes, faculty administrations should adopt a horizontal administrative

approach, developing a system encompassing the student representatives.

(iv) Identification problems of the faculty graduates should be solved and difficulties related to their employment should be overcome.

(v) Programs to which no appointments are made in terms of technical teachers should be revised by the Ministry of Education and modified in such a way as to educate individuals equipped with the knowledge and skills to meet the needs and requirements of the industry.

(vi) Programs which have been designed to add to the knowledge acquired in vocational high schools should be revised to allow students coming from general high schools to adjust.

(vii) In the newly opened universities, the shortage of equipment and tools in laboratories and workshops should be overcome.

(viii) Industrialists should be consulted and programs should be revised in order to enable the graduates who have not been appointed to teaching positions to graduate from value added programs and become types of employers who are highly sought after in the industrial sector.

(ix) The funds allocated to vocational and technical education should be increased throughout the country.

(x) Collaboration between schools and industry should be intensified and it should be in their best interest to try to provide graduates with employment opportunities.

REFERENCES

- Akpınar B, Özer B (2003). "The assessment of the automotive programs of technical education faculties according to student perspectives", *Technology* 6(3-4): 95-106.
- Binici H, Arı N (2004). "Seeking new perspectives in technical and vocational education", *J. Gazi Educ. Fac.* 24 (3): 383-396.
- Cronbach LJ (2004). "My current thoughts on coefficient alpha and successor procedures", *CSE Report 643*, University of California, Los Angeles. 1-32.
- Ekinçi CE, Burgaz B (2007). "The expectation and satisfaction levels of the students at Hacettepe University with respect to academic services", *Hacettepe Univ. J. Educ.* 33: 120-134.
- Elliott KM, Shin D (2002), "Student satisfaction: an alternative approach to assessing this important concept", *J. High. Educ. Policy Manage.* 24(2): 197 -209.
- Erdoğan M, Uşak M (2005). "The development of prospective science teachers' satisfaction scale", *J. Gazi Educ. Fac.* 25(2): 35-54.
- Erdoğan S, Şanlı HS, Bekir HŞ (2005). "Adaptation status of Gazi University faculty of education students to university life", *Kastamonu Educ. J.* 13(2): 479-496.
- Eroğlu E (2002). "Total Quality in Distance Educational its 20th anniversary celebrations", *Open Education Faculty (AÖF) holds its First International Symposium MAY 23-25, 2002* <http://aof20.anadolu.edu.tr/program.htm>, (08.10.2009).
- Eşme İ (2007). "Mesleki ve teknik eğitimin bugünkü durumu ve sorunlar", T.C. Yükseköğretim Kurulu, Uluslararası Mesleki ve Teknik Eğitim Konferansı. Ankara. http://www.yok.gov.tr/duyuru/isa_esme.ppt (27.04.2008)
- Gençyılmaz G, Zaim S (1999). "Total quality management in education", *Dokuz Eylül Univ. J. Fac. Bus.* 28(2): 9-35.
- Hoxley M (2000), "Measuring UK construction professional service quality: what, how, when and who", *Int. J. Qual. Reliab. Manage.* 17(4-5): 511-526.
- Lampert MA (1993). "Student-Faculty informal interaction and the effect on college student outcomes: A Review of the literature", *Adolescence* 28(112): 971-991.
- Ministry of Education (2009). XVI. National Education Council <http://ttkb.meb.gov.tr> 08.10.2009
- Mitchell VW (1994) "How to identify psychographic segments: part1", *Mark. Intell. Plan.* 12(7): 4-10.
- Öçal H (2008). "Mesleki eğitim ve mesleki yönlendirme", *Bilim ve Aklın Aydınlığında Eğitim Dergisi*, 99: 12-19.
- The Student Selection and Placement Center, (2009). Undergraduate level and YOS quotas ÖSYS <http://www.osym.gov.tr/BelgeGoster.aspx?F6E10F889243CFFD4A-F1EF75F7A79688FA52B4F2ED6CCC5> (28.03.2009).
- Ozdamar K (2002). *Statistical data analysis package program-1*, Kaan Publishing, Eskisehir, Turkey.
- Şahin İ, Okay Ş, Özdemir MS (2007), "Türkiye'de mesleki teknik eğitimin durumu ve karşılaşılan sorunlar", *Ulusal Teknik Eğitim Mühendislik ve Eğitim Bilimleri Genç Araştırmacı Sempozyumu*, 1018-1021, Kocaeli Üniversitesi Teknik Eğitim Fakültesi.
- Sezgin Sİ (2000). *Vocational and technical education program development*, Nobel Publishing, Ankara, Turkey.
- Student Life Studies (1999). "Evidence of the quality and effectiveness of undergraduate education at the university of Missouri Columbia", Retrieved 12 February, 2004, from <http://www.missouri.edu/~wwwsls/education.html>
- Tabachnick BG, Fidell LS (2001). *Using multivariate statistics*, A Pearson Education Company, Needham Heights, p. 589.
- Taşçı D (1995). "Toplam kalite yönetimi ve eğitimde uygulanabilirliği", 4. Ulusal Kalite Kongresi Tebliğler Kitabı. pp. 255-259.
- Tekin H (1993). *Measurement and evaluation in education*, Yargı Publishing, Ankara, Turkey.
- Toffler A (1981). *The Third Wave*, Bantam Books, 32-33.
- Turkish Statistics Institute (2009). http://www.tuik.gov.tr/PreTablo.do?tb_id=25&ust_id=8 08.10.2009
- UNESCO (1999). "Second international congress on vocational and technical education", Seoul, Korea.
- Wilson RC, Gaff JG (1975). "College professors and their impact on students", John Wiley & Sons, The United States of America.
- Yenen VZ, Gözlü S (2003), "Customer expectations in higher education: Examples from Turkey", *J. Istanbul Technical University/Engineering*, 2 (2): 28-38.
- Yeşilyaprak B, Öztürk B, Kısaç İ (2001), "Gazi Üniversitesi Mesleki Eğitim Fakültesi öğrencilerinin fakülteye ilişkin algı ve değerlendirmeleri", *Mesleki Eğitim Dergisi*, 3(6): 1-52.