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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

An Evaluation of Technology Faculty Students' Communication Skills in View of Their Professional Roles

Teknoloji Fakültesi Öğrencilerinin İletişim Becerilerinin Mesleki Rolleri Bakımından Değerlendirilmesi

Tahsin ÇETİN*

Abstract

The aim of this study is to evaluate the communication skills of Technology Faculty Wood Working Industrial Engineering students receiving vocational education in terms of their professional roles. The scale of the research was inspired by previously applied scales and adapted for students receiving vocational education using a 5-point Likert-type scale. Data from 380 questionnaires obtained from a total of 850 students enrolled in the Technology Faculty departments of Muğla Sıtkı Koçman University during the 2022/2023 academic years were analyzed in the statistical software package. As a result of the study; it was found that participants' communication competence varied according to gender, age, hometown, high school graduation, and department but did not differ according to the class they were in. It was determined that students could not control their emotions and thoughts in terms of sensitivity competence, were not effective speakers, had problems expressing their emotions and thoughts to others accurately, and occasionally made statements that could damage their relationships with others. Additionally, it was determined that they were not flexible in terms of individual aspects sub-factor in communication, had problems initiating conversation in terms of encouragement competence, were competent in listening skills but felt bored while listening to the speaker, and cared about the gender of the people they communicated with in terms of adaptation competence. The research findings and conclusions are highly valuable in terms of identifying the communication skills and problems of Technology Faculty students receiving vocational education

* Research Assistant, Muğla Sıtkı Koçman University, Faculty of Technology, Department of Woodworking Industrial Engineering, tahsincetin@mu.edu.tr, ORCID: 0000-0002-7886-981X

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and offering solutions for these issues. This study serves as an example for conducting comprehensive comparisons with different education groups in future research.

Keywords: vocational education, technology faculty, woodworking industrial engineering, behavior, communication competence.

Öz

Bu çalışma ile mesleki eğitim alan Teknoloji Fakültesi Ağaçişleri Endüstri Mühendisliği bölümü öğrencilerinin iletişim becerilerinin mesleki rolleri açısından değerlendirilmesi amaçlanmıştır. Araştırmanın ölçeği daha önce uygulanan ölçeklerden esinlenerek geliştirilmiş ve mesleki eğitim alan öğrencilere uyarlanarak 5'li likert tipinde uygulanmıştır. 2022/2023 yıllarında Muğla Sıtkı Koçman Üniversitesi Teknoloji Fakültesi bölümlerinde eğitim gören toplam 850 öğrenciden elde edilen 380 anket verisi istatistik paket programında analiz edilmiştir. Yapılan çalışma sonucunda; katılımcıların iletişim yeterliliği cinsiyete, yaşa, memleketine, lise mezuniyetine ve bölümüne göre farklılık göstermekte olup bulunduğu sınıfa göre farklılık göstermediği sonucuna ulaşılmıştır. Öğrencilerin duyarlılık yeterliliği konusunda duygu ve düşüncelerini kontrol edemedikleri, etkin bir konuşmacı olmadıkları, başkalarına duygu ve düşüncelerini tam olarak ifade etmede problem yaşadıkları ve zaman zaman karşısındaki kişilerle ilişkilerini bozacak ifadelerde bulunabildikleri tespit edilmiştir. Ayrıca iletişimde bireysel yönler alt faktörü açısından esnek davranan birisi olmadıkları, teşvik yeterliliği bakımından konuşmayı ilk başlatan olmada problem yaşadıkları, dinleme yeterliliği konusunda yetkin oldukları ancak konuşan kişiyi dinlerken sıkıldıkları ve uyum yeterliliği açısından da iletişim kurdukları kişilerin cinsiyetini önemsedikleri belirlenmiştir. Araştırma bulguları ve sonuçları mesleki eğitim gören Teknoloji Fakültesi öğrencilerinin iletişim becerileri ve sorunlarının tespiti ve buna yönelik çözüm önerileri açısından oldukça değerlidir ve ileriki araştırmalarda farklı eğitim gruplarıyla kapsamlı karşılaştırmalar yapabilmek için örnek bir çalışma niteliğindedir.

Anahtar Kelimeler: mesleki eğitim, teknoloji fakültesi, ağaç işleri endüstri mühendisliği, davranış, iletişim yeterliliği.

Introduction

Communication has an indispensable place in every individual's life, regardless of their occupation. Due to modern living conditions, individuals have to communicate to varying degrees. The sensitivity of professionals, who have an important position in society, to communication and empathy is an important factor that has a widespread impact. Therefore, for students who will be future professionals, communication skills are as important and valuable as professional knowledge.

The success of those working in a people-oriented profession depends not only on their professional competence in their field, but also on their communication skills and the knowledge, skills and values related to the profession. In order to have a positive impact on the lives of the individuals they serve, people joining the workforce need to have strong communication and empathy skills. A good manager, for example, who can communicate and empathize well, can positively impact the lives of the people they serve and thus be more successful in their profession. Therefore, it is very important in today's business world to focus on the development of communication and empathy skills as well as the professional competencies required by the workforce.

In this context, the benefits of effective communication in professional business life are that it improves the team spirit of employees in businesses, increases innovation, productivity, growth, job quality, loyalty, skills, talents, and can reduce problems, learned helplessness, and inability to develop (Anonymous 1, 2023). In addition to the professional competencies of business employees, it is beneficial for sustainability that their communication competencies are competent and effective.

Given the importance of communication mentioned above, this study aims to examine the communication skills of the students of the Faculty of Technology in terms of their professional roles by considering various factors such as gender, age, grade, department, hometown and vocational education qualifications. In addition, this study examines the relationships between communication competence sub-dimensions and other variables, taking into account values such as mean, standard deviation and relative coefficient of variation. This comprehensive analysis aims to gain a better understanding of students' communication skills and to provide valuable insights for future research and practice, as well as to uncover the problems, if any, related to professional communication deficiency and inadequacy. In this way, it is planned to produce a study that can both help students succeed in their careers and make important contributions to developments in the field of vocational education and contribute to the literature in this field.

Literature Summary

Communication, which is a vital act for humans, is an integral part of social life. Communication is critical for people to interact with each other, to meet their needs and to be understood (Odabaşı and Oyman 2005, 69). People can send various messages to each other without verbal or written communication. In this type of communication, what people do is more important than what they say. For example, a patient responds to a doctor's question "Where does it hurt?" by pointing to that area and using facial expressions. Decoding body language is equivalent to understanding a person's actions, and this includes understanding their thoughts and feelings. Because thoughts affect emotions, emotions affect behaviors and these behaviors shape the character of the person over time (Kaşıkçı 2009, 13).

Having effective communication skills is of great importance in business life as well as in social life (Korkut 1996, 18-23). Communication, which is carried out for purposes such as being, communicating, sharing, influencing, directing, having fun and being happy (Gümüşsuyu et al. 2008, 386), serves a basic function that forms and holds together interpersonal relationships, organizations, professions and societies (Gürgen 1997, 14). It is essential that professionals use appropriate communication skills while fulfilling their professional responsibilities. If a professional cannot establish healthy communication in the field he/she serves, he/she cannot meet the needs of the target audience and cannot fully fulfill his/her professional duties (Akgün, and Çetin 2018, 106).

Communication skills are considered as the ability to establish verbal or written relationships between individuals correctly and the ability of people to understand and recognize each other (Koca and Erigüç 2016, 790). Some studies on communication skills have revealed differences in communication skills in the context of gender. In a study conducted by Korkut (1996) with high

school students, it was found that female students had higher communication skill scores than male students. Similarly, Gölönü and Karcı (2010) examined the communication skills of communication vocational high school students and found that the scores of female students were higher than male students. In addition, there is a significant relationship between the grade level of the students and their communication skills; as the grade level increases, communication skills improve positively.

In Gülbahçe's (2010) study investigating the communication skills of education faculty students, it was seen that there were differences in communication skills depending on the classes in which students were educated. The communication skill scores of first year students were found to be lower than those of second, third and fourth year students. In this study, no difference was found in terms of gender.

In this context, the following hypotheses will be tested.

H1: Communication competence differs according to gender.

H2: Communication competence differs according to age.

H3: Communication competence differs according to the class of study.

H4: Communication competence differs according to hometown

H5: Communication competence differs according to high school graduation status.

H6: Communication competence differs according to the department attended.

Methodology

Information on the methodology of the research is given below.

Reliability Analysis

In the communication competence data set, statements 5, 7, 10, 24, 25 and 27 were asked in reverse and entered as reverse statements when entering data into SPSS. The Cronbach's Alpha reliability coefficient of the "Communication Competence Scale" was calculated as .893 as a result of the analysis without removing the 5th and 24th reverse statements (43 statements). The coefficient formed by removing these two reverse expressions (41 expressions) was calculated as .902 and all subsequent analyzes were made according to the new scale averages formed by removing these two reverse expressions.

Population and Sample

The scope of the research is the students of Muğla Sıtkı Koçman University Faculty of Technology. Therefore, the number and quality of students studying in this department in 2022-2023 determine the population limitation of this research. In this context, 850 students constitute the population of the study according to the faculty data. 380 students determined by simple random method constitute the sample representing the universe. In the study, 380 of the 400 questionnaire forms distributed to the students were accepted as valid and the return rate was determined as 95%. Sample size can also

be applied in formulas according to whether the number of elements in the universe is known or not (Özdamar 2003, 116-118).

When the main population size (N) is known, we can use the formula below to calculate the sample size. Cochran sample size formula, which is a formula generally used by researchers, can be used to calculate the sample size. The Cochran formula is as follows: n = (Z^2 * p * q) / E^2

Here, n = sample size Z = Z score (95% confidence interval used for 1.96) p = estimated proportion (percentage of the main population, usually 0.5 if unknown) q = 1-p E = acceptable margin of error (usually 5% margin of error is accepted, i.e. 0.05)

In this case, let's place the values in the formula to calculate the sample size:

n = (1.96^2 * 0.5 * 0.5) / 0.05^2

n = (3.8416 * 0.25) / 0.0025

n = 0.9604 / 0.0025

n ≈ 384.16

As a result, approximately 384 students should be selected as the sample size. This value, with a 95% confidence interval and a 5% margin of error, is calculated to be sufficient to represent the students of Muğla Sıtkı Koçman University Faculty of Technology. In the current study, considering the data in Table 1, it was concluded that the sample size would be sufficient with 380 students.

Data Collection Tool / Data Set

The survey method, which is the most widely used and least costly method for primary research data collection, was preferred. A 5-point Likert scale was used as the scale type. The communication competence scale used in the study was developed by the authors with 43 statements inspired by previous academic studies (Wiemann 1977, 195-213 and Korkut 1996, 18-23) and expert opinion and adapted to students receiving vocational education. The scale questions prepared by the researchers by utilizing various scales were applied with the approval of Muğla Sıtkı Koçman University Science and Engineering Sciences Research Ethics Committee (Protocol Number: 2023-04/ 230002, Approval Date: 18.05.2023).

Data Analysis

Using the IBM SPSS 22 statistical package program, a total of 6 hypotheses based on the information obtained in the literature were tested. By looking at the skewness and kurtosis coefficients, the suitability of the relevant scale was evaluated in analyzes requiring normal distribution (Kunan 1998, 295-332 and Kline 2011, 427). If both of these coefficients do not exceed ± 2, it can be said that the data distribution is normal, and if they exceed ± 2, it can be said that the data are not normally distributed. However, in order to make a normal distribution decision, the closeness of means and medians, histogram, coefficient of variance, detrended Q-Q plot and Kolmogorov-Smirnov test, known as normality test, were also utilized. First of all, parametric tests were used in the analyses to examine the differences. Related tests such as independent sample t-test and one-way analysis

of variance (One Way Anova) were preferred. When the necessary prerequisites were not met, nonparametric tests were used. Levene's tests (Post Hoc) were selected by checking the significance and homogeneity of variances. Tamhane's T2 and Scheffe tests were used to evaluate the homogeneity of variances (Otrar M, n.d.).

Alternative tests such as "Two-Independent Samples Test" (Mann Whitney U) and "K Independent Samples Test" (Kruskal Wallis – H), which are non-parametric equivalents of independent sample t-test, were used. Mann Whitney U pairwise comparisons were made to determine the source of the difference. All analyses were based on a significance level of p=.05.

"The coefficient of relative variability is a value obtained by multiplying the standard deviation by one hundred and dividing it by the mean, and since it includes the arithmetic mean and standard deviation, it provides more information about the score distribution. A relative coefficient of variability of 26 and above indicates that the group has a flat distribution, in other words, the group is heterogeneous because the standard deviation is greater than the arithmetic mean and the scores are far from each other. A value between 20-25 indicates that the group is normally distributed, and a value of 19 and below indicates that the group is homogeneous, in other words, the standard deviation is smaller than the arithmetic mean and the scores are close to each other" (Çetin 2018, 186).

All reverse expressions in the study were shown by adding the initial letter of the English word Reversal to the end of the expression. In addition, reverse coding was performed during data entry and the data were organized in a way to express positive meaning.

Findings

In this section, frequency findings of demographic and descriptive variables and hypothesis findings to examine differences are included.

Findings on demographic and descriptive variables

71.1% of the participants in the research are men and 28.9% are women. It was determined that the majority of the participants (54.7%) were between the ages of 23-24. While those in the 18-22 age group are 40.0%, those in the 25-29 age group are 2.1%, the rate of participants aged 30 and over is only 3.2%. The proportion of participants in the 1st and 4th grades is equal (40.0%). While those in the 2nd grade are 6.3%, those in the 3rd grade are 13.7%. When the high school graduation status of the participants is examined, it is seen that the majority are those who graduated from Anatolian high school (57.4%). While 28.4% were from vocational high schools, those from science high schools, social sciences and colleges etc. were included in the others category. The rate of high school graduates is 14.2%. When the department distribution of the participants was examined, it was determined that the most students were Energy Systems Engineering (40.0%), followed by Woodworking Industrial Engineering (32.1%) and Information Systems Engineering (27.9%). When the participants were evaluated according to their hometowns, it was determined that they mostly came from the Aegean (27.9%) and Marmara regions (23.2%). Other regions are the Central Anatolia region (13.2%), the Black Sea Region (12.1%), the Mediterranean Region (11.1%), the Eastern Anatolia Region (7.9%)

and the Southeastern Anatolia Region (4.7%). Table 1 below shows the mean, standard deviation and relative coefficient of variation values for communication competence statements.

Table 1.

Mean, Standard Deviation and Relative Coefficient of Variation (RVC) Results of Communication Competence Sub-Dimensions

Factor Name	Statement Number	Expressions	$\overline{x}$	s.s.	RVC (V)
Empathy Skills	EMS1	I try to understand my teachers and friends.	4.53	.694	15.32
	EMS8	I empathize while listening to the other person.	4.45	.654	14.70
	EMS26	The more the people I communicate with understand me, the happier I am.	4.44	.886	19.95
	EMS42	I can evaluate problems from different perspectives.	4.47	.694	15.53
Listening Skills	LİS2	I sincerely listen to the advice and suggestions of my teachers and friends with whom I communicate.	4.26	.861	20.21
	LİS6	I take enough time to listen to others.	4.07	.838	20.59
	LİS7R	I usually do not give the other person the floor when I speak.	4.36	1.017	23.33
	LİS9	I listen patiently to the person speaking.	4.22	.890	21.09
	LİS10R	I get bored while listening to the other person.	3.53	1.081	**30.62**
	LİS14	I respect all kinds of ideas and opinions of the other person.	4.21	.944	22.42
Responsiveness Capability	REC3	I have no difficulty in expressing my feelings and thoughts to others fully.	3.88	1.058	**27.27**
	REC11	I am moderate in my criticism.	3.92	.985	25.13
	REC25R	I cannot control my feelings and thoughts.	3.53	1.290	**36.54**
	REC27R	I can make expressions that may spoil my relations with the other person.	3.17	1.255	**39.59**
	REC38	I do not make unexpected requests of my friends.	4.24	.850	20.05
	REC39	I am an effective speaker.	3.81	1.061	**27.85**
Individual Aspects of Communication	IAC4	I can make eye contact while expressing my feelings and thoughts.	4.45	.758	17.03
	IAC13	I use understandable language and expression while peaking.	4.27	.815	19.09
	IAC17	I do not interrupt when the other person is speaking.	4.16	.901	21.66
	IAC18	I pay attention to the tone of voice in my speech.	4.29	.807	18.81
	IAC19	I use gestures and mimics in my speech.	4.34	.792	18.25
	IAC23	I do not ask to be interrupted while speaking.	4.47	.820	18.34
	IAC32	I am a popular and respected student.	3.98	.991	24.90
	IAC33	I am flexible.	3.74	1.137	**30.40**
	IAC34	My friends consult me when they have problems.	4.05	.912	22.52
	IAC35	I usually say everything when and where it is appropriate.	4.09	.836	20.44
	IAC36	I am always sensitive to the needs of others.	4.31	.728	16.89

Communication Incentive Competence	CIC12	I start the conversation first.	3.19	.947	**29.69**
	CIC15	I ask questions to understand the other person.	4.38	.684	15.62
	CIC40	I encourage my friends to talk.	4.05	.906	22.37
Human Relations	HUR16	I give positive energy to others when I speak.	4.06	.962	23.69
	HUR41	I am someone people feel comfortable talking to.	4.47	.717	16.04
	HUR43	I make an effort to increase my communication.	4.22	1.008	23.89
Compliance Efficiency	COE20	The gender of the person I communicate with is not important to me.	4.05	1.278	**31.56**
	COE21	I know how to apologize when I make a mistake.	4.47	.753	16.85
	COE22	In a discussion, I accept the wrongness of ideas.	4.25	.807	18.99
	COE37	I get along well with students and value them.	4.38	.758	17.31
Social Behavior Competence	SBC28	It does not bother me to meet new students.	4.26	1.002	23.52
	SBC29	I feel comfortable talking to new students I meet.	4.09	1.000	24.45
	SBC30	I like social environments where I can meet new friends.	4.19	.963	22.98
	SBC31	I do not hesitate to talk to teachers.	4.29	.939	21.89

Table 1 shows the mean, standard deviation and relative coefficients of variation of communication competence sub-dimensions. Four different statements (EMS1, EMS8, EMs26, EMS42) were used to measure the empathic competence dimension. Accordingly, while the statement "The more the people I communicate with understand me, the happier I am" (= 4,44; V=19,95>19) shows normal distribution characteristics, the other three statements show a pointed distribution when the relative variability coefficient is taken into account. In other words, it can be said that students are quite competent in empathy. Students try to understand their teachers and friends and empathize while listening to the other person. It can be said that they are in a state of happiness parallel to the degree to which the people they communicate with understand them and that they can look at problems from different perspectives.

Six different statements (LIS2, LIS6, LIS7R, LIS9, LIS10R, LIS14) are used to measure the listening competence dimension. Accordingly, while the statement "I get bored while listening to the speaker LIS10R" (=3,53; V=30,62>26) has a value showing heterogeneous characteristics with a skewed distribution, the other five statements show normal distribution characteristics when the coefficient of relative variability is taken into account (19<V<26 in all except LIS10R). In other words, it can be said that while students have other listening competencies, they get bored while listening to the speaker.

The dimension of responsiveness capability is measured with six different statements (REC3, REC11, REC25R, REC27R, REC38, REC39). Accordingly, the statement "I do not have difficulty in expressing my feelings and thoughts to others completely REC3" (= 3,88; V=27,27>26), "I cannot control my feelings and thoughts REC25R" (= 3,53; V=36,54>26), "I may make expressions that may spoil my relations with the other person REC27R (= 3,17; In other words, it can be said that students have difficulties in conveying their feelings and thoughts to others, cannot control their feelings and thoughts, may use expressions that may disrupt their relationships with others and are not effective

speakers. On the positive side, it can be said that the students were moderate in criticizing and did not make unexpected requests from their friends.

The dimension of individual aspects in communication is measured with eleven different statements (IAC4, IAC13, IAC17, IAC18, IAC19, IAC23, IAC32, IAC33, IAC34, IAC35, IAC36). Accordingly, while the expression "I am a person who acts flexibly IAC33" (= 3,74; V=30,40>26) has a flattened distribution, the expressions IAC13, IAC17, IAC32, IAC34, IAC35 show normal distribution characteristics when the relative coefficient of variability is taken into consideration (19<V<26). On the other hand, the statements of IAC4, IAC18, IAC19, IAC23 and IAC36 show a pointed distribution with homogeneous characteristics. In other words, while the students have similar views on making eye contact while expressing my feelings and thoughts, paying attention to the tone of voice, using gestures and facial expressions, not wanting to be interrupted, and always being sensitive to the needs of others, They have more balanced views, showing a normal distribution, on using intelligible language and expressions when speaking, not interrupting others when speaking, thinking that they are a popular and respected student, being in a position to be consulted by their friends, and being able to say anything according to the time and place. However, it is understood from the flattened V-value of the responses to the statement of IAC33 that the students do not act flexibly.

The dimension of encouragement competence in communication is measured with three different statements (CIC12, CIC15, CIC40). Accordingly, while the expression "I initiate the conversation first" (=3,19; V=29,69>26) has a value showing heterogeneous characteristics with a flat distribution, the expression "I encourage my friends to talk" (=4,05; 19<V=22,37<26) shows normal distribution characteristics when the relative variability coefficient is taken into consideration. It can be said that the statement "I ask questions to understand the other person, I ask questions in order to understand the other person" (CIC15) (=4,38; V=15,62<19)" shows a pointed distribution and forms a homogeneous structure. In other words, it can be said that students encourage their friends to talk and ask questions to understand them; however, they have difficulties in starting a conversation.

The dimension of human relations is measured with three different statements: HUR16, HUR41, HUR43. According to this, the statements "I give positive energy to the other person when I am talking" (=4,06; 19<V=23,69<26) and "I make an effort to increase my communication" (=4,22; 19<V=23,89<26) show normal distribution characteristics when the relative variability coefficient is taken into consideration. It can be said that the expression "I am a person that people can talk to comfortably HUR41" (=4,47; V=16,04<19)" shows a pointed distribution and forms a homogeneous structure. In other words, it can be said that students make an effort to increase communication, give positive energy to others and at the same time they are someone who can be easily talked to.

The dimension of compliance competence is measured with four different statements: COE20, COE21, COE22, COE37. Accordingly, it can be said that the statements "I know how to apologize when I make mistakes COE21" (=4,47; V=16,85<19), "I accept the wrongness of thoughts in the discussion COE22" (=4,25; V=18,99<19), "I get along well with students and value them COE37" (=4,38; V=17,31<19)" show a pointed distribution and form a homogeneous structure. The statement "The gender of the person I communicate with is not important for me" (=4,05; V=31,56>26) exhibits

a heterogeneous structure with a flat distribution. In other words, it can be said that students can have wrong thoughts in discussions, apologize when necessary, get along well with their friends and value them. However, the gender of the person they communicate with is very important for students.

The social behavior competence dimension is measured with four different statements (SBC28, SBC29, SBC30, SBC31). Accordingly, "Meeting new students does not make me uncomfortable SBC28" (=4,26; 19<V=23,52<26), "I am comfortable talking to new students I meet SBC29" (=4,09; 19<V=24,45<26), "I like social environments where I can meet new friends SBC30" (=4,19; 19<V=22,98<26) and "I do not hesitate to talk to teachers SBC31" (=4,29; 19<V=21,89<26) show normal distribution characteristics when the coefficient of relative variability is taken into consideration. In other words, it can be said that students do not have problems in meeting and talking to new students, they like social environments and they do not hesitate to talk to their teachers.

Findings of the hypotheses to analyze the differences

In this section, it will be revealed whether the research hypotheses are supported or not according to the findings obtained from the tests to examine the differences. Communication Competence is abbreviated as "CQ" in the tables.

Table 2.
Results of t-Test Analysis of Hypothesis H1

H. NO	B. D.	Variance	Groups	N	(X)	(SS)	(t)	(sd)	(p)
	CQ		Female	110	4.248	.408			
H1		Gender	Male	270	4.091	.412	3.378	378	.001
			Total	380					

According to the results of the t-test conducted on whether the participants' communication competence differs according to gender in Table 2, the arithmetic averages of the scores of the female participants from all the items questioning communication competence are higher than the arithmetic averages of the scores of the male participants. As a result of the t-test analysis, since the significance level was determined as (p= ,001, t=3,378), there is a significant difference between the communication competencies of female and male participants in favor of female participants. Accordingly, hypothesis H1 is supported.

The data in Table 3 on whether communication competence differs according to age, grade, hometown, high school graduation and department show normal distribution (between skewness and kurtosis ± 2 values) and homogeneity (p=.596>.05, p=.067>.05, p=.446>.05, p=.315>.05, p=.336 >.05 for Levene's test respectively). For this reason, one-way analysis of variance (One Way Anova), one of the parametric tests, was used in all relevant tests below (H2-H6). In order to decide which multiple comparison technique to use after this test, it was first tested whether the variances of the group distributions were homogeneous (Levene's test), and since the results of the relevant test showed that the variances were homogeneous (p>.05), one of the related techniques (Scheffe test) was used from the post hoc menu. The Scheffe test was preferred because it is sensitive to alpha-type error. Table 3 below shows the results of one-way analysis of variance (One Way Anova) for hypotheses H2-H6.

Table 3.
One Way Analysis of Variance (One Way Anova) Results of Hypotheses H2-H6

		f and x̄ values					ANOVA RESULTS				
Hypothesis			Groups	N	x̄	S	Variance Source	(KT)	sd	(KO)	F	p
H2	**ISGD**	Age	18-20 years old	152	4,06	.390	Inter-group	2,883	3	,961	5,753	**.001**
			21-24 years old	208	4,16	.428	In-group	62,803	376	,167		
			25-29 years old	8	4,46	.342	Total	65,686	379			
			30 years and older	12	4,44	.309						
H3		Grade	1st Grade	152	4,08	.361	Inter-group	1,311	3	.437	2,552	.055
			2nd Grade	24	4,13	.570	In-group	64,375	376	.171		
			3rd grade	52	4,09	.501	Total	65,686	379			
			4th grade	152	4,21	.402						
H4		Hometown	Aegean Region	106	4,11	.436	Inter-group	3,526	6	.588	3,527	**.002**
			Marmara Region	88	4,21	.389	In-group	62,160	373	.167		
			Mediterranean Region	42	4,05	.338	Total	65,686	379			
			Black Sea Region	46	3,97	.428						
			Eastern Anatolia Region	30	4,12	.532						
			Southeastern Anatolia Region	18	4,36	.342						
			Central Anatolia Region	50	4,23	.349						
H5		Graduation	Anatolian High School	218	4,07	.423	Inter-group	2,654	2	1,327	7,937	**.000**
			Vocational High School	108	4,19	.384	In-group	63,032	377	.167		
			Others (science, social, college, etc.)	54	4,29	.398	Total	65,686	379			
H6		Department	Woodworking systems engineering	122	4,21	.389	Inter-group	3,079	2	1,540	9,272	**.000**
			Information systems engineering	106	4,21	.376	In-group	62,607	377	.166		
			Energy systems engineering	152	4,03	.442	Total	65,686	379			

As it can be seen in Table 3, as a result of the one-way analysis of variance conducted to determine whether the arithmetic averages of the communication competence scale show a significant difference according to age, class, hometown, high school graduation and department variables, there is a difference between the group aged 30 and over and the group aged 18-20 in favor of the age group aged 30 and over (p=.027) (F=5,753; p=.001). Communication competence also differed in terms of region of origin (F=3,527; p=.002), high school graduated from (F=7,937; p=.000) and department studied (F=9,272; p=.000), while the difference between the arithmetic averages of the groups on the basis of grade was not statistically significant (F=2,552; p=.055). In the light of the information obtained from Table 9, hypothesis H3 was not supported, while hypotheses H2, H4, H5 and H6 were supported.

Table 4.
Support/Dis-support of Hypotheses

Hypothesis Number	Hypothesis	Supported Status
H1	Communication competence differs according to gender.	SUPPORTED
H2	Communication competence differs according to age.	SUPPORTED
H3	Communication competence differs according to the grade studied.	NOT SUPPORTED
H4	Communication competence differs according to hometown	SUPPORTED
H5	Communication competence differs according to high school graduation status.	SUPPORTED
H6	Communication competence differs according to the department attended.	SUPPORTED

Conclusion, Discussion and Recommendations

Today, it is of great importance not only to have professional and technical knowledge, but also to effectively communicate all the acquired knowledge to others. Speaking is the most practical way of transferring information. It is possible to say that the practicality and effectiveness of communication skills are directly related to success in both social and business life. In this respect, effective communication skill is an important competence that helps to carry out all business processes successfully. In this context, when the study is evaluated, the transformation of students who receive vocational education and have the opportunity to reinforce these competencies in Faculties of Technology into individuals equipped with communication skills is very valuable in terms of their occupation with a full-time job after graduation and their social life.

As a result of this study; while the communication competence of the participants differed according to gender, age, hometown, high school graduation and department, it did not differ on the basis of classes. It was determined that the students of the Faculty of Technology could not control their emotions and thoughts, were not effective speakers, had problems in fully expressing their emotions and thoughts to others, and sometimes made expressions that could disrupt their relationships with others. In addition, it was determined that they were not flexible in terms of the sub-factor of individual aspects in communication, they had problems in being the first to initiate the conversation in terms of encouragement competence, they were competent in listening competence, but they were bored while listening to the speaker, and they cared about the gender of the people

they communicated with in terms of adaptation competence. In studies on communication skills in general, it is seen that factors such as gender and class level are effective on communication skills. In some studies, it was found that female students had higher communication skills scores than male students (Korkut 1996, 18-23; Gölönü and Karcı 2010, 123-140). These results may suggest that gender has a significant effect on communication skills.

In this study, on the other hand, it was found that the participants' communication competences differed according to gender, age, hometown, high school graduation and department, but not on the basis of grades. Although this result seems to be contradictory with the findings of Korkut (1996) and Gölönü & Karcı (2010), another study conducted by Gülbahçe (2010) found no significant difference in terms of gender (Gülbahçe, 2010).

It is seen that there is a significant relationship between the grade level of the students and their communication skills; as the grade level increases, communication skills improve positively (Korkut 1996, 18-23; Gölönü and Karcı 2010, 123-140; Gülbahçe 2010, 12-22). Communication skills such as mental, emotional and behavioral communication skills have positive effects on all the metacognitive, cognitive, motivational and behavioral dimensions of cultural intelligence; it has reached the conclusion that employees with high cultural intelligence can easily pass on intercultural communication and they support business success as the result of the increase cultural sensitivities of them (Nuray and Kahya, 2016: 18). In this study, similarly, the communication skill scores of first grade students were found to be lower than those of upper grade students. This emphasises that education is an important factor. Our hypothesis that communication competence differs according to class is not statistically significant (p=.055), but it should be taken into consideration that it takes a value close to the threshold value.

The other result obtained in this study is that it was observed that the students of the Faculty of Technology have some weaknesses in communication skills. This result can be concluded that the department is also effective on the acquisition of communication skills. In this respect, the evaluation of sub-factors such as individual aspects in communication, encouragement competence, listening competence and adaptation competence provides important clues about which areas students need to improve.

In conclusion, studies on communication skills show that gender, grade level, department and other socio-demographic factors are effective on communication skills. It is important to keep in mind that these factors are not equally effective in all cases and that the results of different studies may differ from each other. In order to improve communication skills, it is necessary to pay attention to these factors and apply appropriate educational strategies. At the same time, it is a sub-result of this study to say that individual differences should be evaluated and each student should be supported according to his/her own qualifications.

The main problems of communication education overlap with the general problems of vocational education in our country. According to this, in vocational education, students learn theoretically. It is essential that they reinforce their knowledge by applying it in practice. In this respect, internship practice constitutes the basis of vocational education. In order to develop professional knowledge and

skills and to ensure adaptation to business life in the Faculties of Technology, students are provided with the opportunity of periodic workplace training and summer internship practice in enterprises (Kılıç, 2020: 375). These internships are an advantageous situation that allows students to increase their professional knowledge and workplace communication.

In addition, this study emphasizes that communication skills have a facilitating effect and that these skills are needed more especially in professions that frequently interact with people, thus emphasizing the importance of effective communication skills in business life and human relations. For this reason, it is recommended that compulsory courses on communication skills and effective communication techniques should be added to the curriculum of the Faculty of Technology Departments where new students who will join the business life are trained. Therefore, in the light of the findings and results of this study, the following concrete suggestions can be made to improve the communication skills of the students of the Faculty of Technology:

1. Communication skills training: Organizing regular communication skills training for students to help them improve in areas identified as weak, particularly sensitivity, encouragement and adaptability competencies.

2. Increasing classroom interaction: Organizing group work, presentations and discussions that encourage students to communicate more in class.

3. Mentoring and counseling services: To support students' individual development by providing mentoring and counseling services under the guidance of experienced and competent professionals in communication skills.

4. Communication skills laboratories: Establishing communication skills laboratories where activities such as simulations and role plays can be organized, allowing students to put their communication skills into practice.

5. Gender awareness training: Organizing awareness trainings to eliminate students' prejudices and misconceptions about gender.

6. Establishing a system to assess and monitor communication skills: Establishing a system that regularly evaluates students' communication skills and monitors their development to make the education process more effective.

In conclusion, improving communication skills is crucial for students to be successful in both their academic and professional lives. In line with the data obtained above, these suggested steps provide concrete and applicable strategies to improve the communication skills of Faculty of Technology students. By implementing these suggestions, educational institutions and faculty members can contribute to overcoming students' deficiencies and strengthening their communication skills, and thus have a positive impact on their career success and social lives. Thus, students can be provided with the opportunity to overcome their deficiencies in developing their professional communication skills. As an additional suggestion, in order to expand the scope of this study as a reference for future studies, the questionnaire form can be expanded and the relationship between communication skills and factors such as parents' education level, income level, sports or hobbies they are interested in, etc. can also be investigated. In addition, the sample size can be increased and the communication skills of students studying in different faculties can be compared.

Data Availability Statement: Data generated or analyzed during this study can be obtained from the authors upon request.

Use of Artificial Intelligence for Language and Spelling Checking: Artificial intelligence was not used in this study.

Kaynakça

Akgün, R., and Çetin H. 2018. Communication Skills of University Students and Determining Empathy Levels. *Manas Journal of Social Research*, 7 (3): 103-117.

Anonymous 1, (2023). https://networkokulu.net/etkili-iletisimin-mesleki-yasamdaki-10-faydasi/ (Access Date: 23.12.2023).

Çetin, S. A. (2018). Chefs' five-factor personality traits, individual perception of innovation, individual innovation behavior relationship: Bursa sample. Balıkesir University Social Sciences Institute [Unpublished Doctoral Thesis]. p:1-359.

Gölönü, S. and Karcı, Y. (2010). Communication Skills of Vocational High School Students Examination of Levels (Ankara Province Sample). *Journal of Communication Theory and Research*, 31, 123-140.

Gülbahçe, Ö. (2010). Communication Skills of K.K. Faculty of Education Students Examining. *Journal of Physical Education and Sports Sciences*, 12 (2), 12-22.

Gümüşsuyu, Ç., Sönmez, S., and Oyur, E. (2008). General and Technical Communications. Ankara: *Savaş Publishing*, p:386.

Gürgen, H. (1997). Communication Quality in Organizations. İstanbul: *Der Puplishing*.

Kaşıkçı, E. (2009). Communication and Body Language. İstanbul: *Hayat Publishing*.

Kline, R.B. (2011). Principles and practice of structural equation modeling (3rd ed.) *The Guilford*, p.427.

Kılıç, N. (2020). Meslek Liselerinde İletişim Eğitimi Üzerine Bir Betimleme, *Selçuk İletişim*, 2020, 13 (1): 354-377.

Koca, Ş.G. and Erigüç, G. (2017). Validity and Analysis of the Communication Competency Scale Korkut, F. (1996). Development of the Communication Skills Evaluation Scale: Reliability and Validity Studies. *Journal of Psychological Counseling and Guidance*, 2 (7),18-23.

Kunan, J.A. (1998). An introduction to structural equation modelling for language assessment research. *Language Testing*, 15 (3), 295-332.

Mercan, N., Kahya, V. (2016). Örgütlerde Kültürel Zekânın İletişim Becerileri ile İlişkisine Yönelik Bir Araştırma. *Akademia*, 4/3, 18-26. doi: 10.17680/akademia.67918.

Odabaşı, Y. and Oyman, M. (2005). Marketing Communication Management (8. Press). İstanbul: *MediaCat Publishing*.

Otrar, M. (t.y.). One-way analysis of variance (Anova). Access Date: 15.06.2023 http://mustafaotrar.net/istatistik/tek-yonlu-varyans-analizi-anova/

Özdamar, K. (2003). Modern scientific research methods. Eskişehir: *Kaan Bookstore*.

Reliability. *International Journal of Management Economics and Business*, 13 (4), 789-799.

Wiemann, J.M. (1977). Explication and Test of a Model of Communicative Competence. *Human Communication Research,* 3, 195-213.

Yazıcıoğlu, Y. and Erdoğan, S. (2004). SPSS applied scientific research methods. Ankara: *Detay Publishing*.

Teknoloji Fakültesi Öğrencilerinin İletişim Becerilerinin Mesleki Rolleri Bakımından Değerlendirilmesi

Tahsin ÇETİN*

Giriş

İletişim, her bireyin hayatında, mesleğine bakılmaksızın vazgeçilmez bir yere sahiptir. Modern yaşam koşulları nedeniyle, bireyler çeşitli derecelerde iletişim kurmak zorunda kalmaktadır. Toplumda önemli bir konuma sahip olan profesyonellerin iletişim ve empati konusundaki duyarlılığı, yaygın bir etkiye sahip olan önemli bir faktördür. Bu nedenle, geleceğin profesyonelleri olacak öğrenciler için iletişim becerileri, mesleki bilgi kadar önemli ve değerlidir.

İnsan odaklı bir meslekte çalışan profesyonellerin başarısı, sadece kendi alanlarındaki yetkinliklerine değil, aynı zamanda iletişim becerilerine ve meslekle ilgili bilgi, yetenek ve değerlere sahip olmalarına da bağlıdır. Hizmet verdikleri bireylerin yaşamlarına olumlu bir etki yapabilmek için, profesyonellerin güçlü iletişim ve empati becerilerine sahip olmaları gerekmektedir. İyi iletişim kurabilen ve empati yapabilen bir profesyonel, hizmet verdiği kişilerin yaşamlarına olumlu yönde etkileyebilir ve bu sayede mesleğinde daha başarılı olabilir. Bu nedenle, profesyonel yeterliliklerin yanı sıra iletişim ve empati becerilerinin geliştirilmesine de odaklanmak önemlidir.

Bu çalışma, Teknoloji Fakültesi öğrencilerinin iletişim becerilerini, cinsiyet, yaş, sınıf, bölüm, memleket ve mesleki lise gibi çeşitli faktörleri göz önünde bulundurarak mesleki rolleri açısından incelemeyi amaçlamaktadır. Ayrıca, iletişim yeterlilik alt boyutları ve diğer değişkenler arasındaki ilişkileri, ortalama, standart sapma ve bağıl değişkenlik katsayısı gibi değerler dikkate alınarak incelenmektedir. Bu kapsamlı analiz, öğrencilerin iletişim becerilerine dair daha iyi bir anlayış kazandırmak ve gelecekteki araştırma ve uygulamalar için değerli bilgiler sunmak amacıyla yapılmaktadır. Bu sayede, hem öğrencilerin kariyerlerinde başarılı olmalarına yardımcı olacağı hem de mesleki eğitim alanındaki gelişmeler için önemli katkılar sunabilecek olmasıdır.

* Arş. Gör. Dr., Muğla Sıtkı Koçman Üniversitesi, Teknoloji Fakültesi, Ağaç İşleri Endüstri Mühendisliği, tahsincetin@mu.edu.tr, ORCID: 0000-0002-7886-981X

Yöntem

Araştırmada öğrencilere dağıtılan 400 anket formundan 380 tanesi geçerli kabul edilmiş ve geri dönüş oranı %95 olarak tespit edilmiştir. Örneklem büyüklüğü evrendeki eleman sayısının bilinip bilinmediğine göre de formüllerde uygulanabilmektedir (Özdamar, 2003:116-118).

Birincil araştırma veri toplamasında en çok kullanılan ve maliyeti az olan anket yöntemi tercih edilmiştir. Ölçek tipi olarak 5'li Likert ölçeği kullanılmıştır. Araştırmada kullanılan iletişim yeterliliği ölçeği daha önce uygulanmış akademik çalışmalardan (Wiemann, 1977; Korkut, 1996) esinlenerek ve uzman görüşü de alınarak yazarlar tarafından 43 ifadeli olarak geliştirilmiş ve mesleki eğitim alan öğrencilere uyarlanmıştır. Bağımsız örneklem t-testinin non-parametrik karşılığı olan "Two-Independent Samples Test" (Mann Whitney U) ve "K Independent Samples Test" (Kruskal Wallis –H) testi gibi alternatif testler kullanılmıştır. Farklılığın kaynağını belirlemek için Mann Whitney U ikili karşılaştırmaları yapılmıştır. Tüm analizlerde p=,05 anlamlılık düzeyi esas alınmıştır. Çalışmadaki tüm ters ifadeler İngilizce Reversal kelimesinin baş harfinin ifade sonlarına eklenmesi şeklinde gösterilmiştir. Ayrıca veri girişi esnasında ters kodlama yapılarak veriler olumlu anlam ifade edecek şekilde düzenlenmiştir.

Bulgular ve Tartışma

Yapılan çalışma sonucunda; katılımcıların iletişim yeterliliği cinsiyete, yaşa, memleketine, lise mezuniyetine ve bölümüne göre farklılık gösterirken sınıflar bazında farklılık göstermemektedir. Teknoloji Fakültesi öğrencilerinin iletişimde duyarlılık yeterliliği konusunda duygu ve düşüncelerini kontrol edemedikleri, etkin bir konuşmacı olmadıkları, başkalarına duygu ve düşüncelerini tam olarak ifade etmede problem yaşadıkları ve zaman zaman karşısındaki kişilerle ilişkilerini bozacak ifadelerde bulunabildikleri tespit edilmiştir. Ayrıca iletişimde bireysel yönler alt faktörü açısından esnek davranan birisi olmadıkları, teşvik yeterliliği bakımından konuşmayı ilk başlatan olmada problem yaşadıkları, dinleme yeterliliği konusunda yetkin oldukları ancak konuşan kişiyi dinlerken sıkıldıkları ve uyum yeterliliği açısından da iletişim kurdukları kişilerin cinsiyetini önemsedikleri belirlenmiştir.

Teknoloji Fakültesi öğrencilerinin iletişim becerileri konusunda bazı zayıflıklar yaşadığı belirtilmiştir. Bu sonuç, bölümün de iletişim becerileri üzerinde etkili olduğunu düşündürebilir. İletişimde bireysel yönler, teşvik yeterliliği, dinleme yeterliliği ve uyum yeterliliği gibi alt faktörlerin değerlendirilmesi, öğrencilerin hangi alanlarda gelişim göstermeleri gerektiğine dair önemli ipuçları sağlamaktadır.

Sonuç olarak, iletişim becerileri üzerine yapılan çalışmalar, cinsiyet, sınıf düzeyi, bölüm ve diğer sosyo-demografik faktörlerin iletişim becerileri üzerinde etkili olduğunu göstermektedir. Bu faktörlerin her durumda aynı şekilde etkili olmadığını ve farklı çalışmaların sonuçlarının birbirinden farklı olabileceğini unutmamak önemlidir. İletişim becerilerini geliştirmek için bu faktörlere dikkat etmek ve uygun eğitim stratejileri uygulamak önemlidir. Aynı zamanda, bireysel farklılıkların da değerlendirilmesi ve her öğrencinin kendi özelliklerine göre desteklenmesi gerektiği unutulmamalıdır.