ADAPTATION OF INTERNET ETHICAL ATTITUDE SCALE TO UNIVERSITY STUDENTS: COMPARISON OF INTERNET ETHICAL ATTITUDES ACCORDING TO STUDENTS' DEPARTMENTS

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Abstract

Internet ethics is clearly an issue that concerns every Internet user closely no matter what their purpose is. Teachers are undoubtedly the ones to assume the most critical task at this stage. As persons who will shape future generations, teachers are expected to fully grasp the importance of Internet ethics in school years and display model behavior using the Internet fairly. The goal of this study is to adapt the Internet ethical attitude scale for students from secondary school to university and compare the ethical attitudes of participant students according to their genders and departments. The study was carried out with 294 students. The data was collected through the Internet Ethical Attitude Scale (IEAS) and personal information form designed by researchers. The results showed that female students had higher total scores and sub-factor scores in IEAS than male students. It is possible to say that female students are more conscientious than male students in the issue of Internet ethical attitudes. As in other factors, attitudes related to "homework plagiarism" are higher in female students than male students.

Keywords: Internet ethical attitude scale, Internet ethics

The Internet is a very wide world with its increasing number of users and busy communication traffic, where almost every action is possible through various applications. People are now able to use the cyber world in order to carry out daily routines such as banking, making reservations,

shopping, course registration, writing, painting, graphics, sharing photos and videos, arranging doctor appointments, resource scanning, communication and paying the bills easily and in a very short time. According to the results of a study by the Turkish Statistical Institute (TSI) in April 2014 with people ages 16-74, the rate of people in our country using the Internet in 53.8%. It was 48.9% in 2013. According to the same study, the rate of connection to the Internet from homes was 49.1% in 2013 while it rose to 60.2% in 2014 (TSI, 2014). According to the 2014 report of Global Digital Statistics, 2.5 billion people in the world use the Internet. According to the data from the same study, the rate of Internet users to the whole population in Turkey is 45%. On average, those users spend time on the Internet for 4.9 hours on their personal computers and 1.9 hours on mobile devices. The average time spent daily on social media is 2 hours and 32 minutes (GDS, 2014). Most people define the Internet as a cyber world; however, that cyber world is like a real life space where millions of people spend most of the day, as can be understood from the data and its services. Terms widely used today such as e-public, e-government, and e-signature all indicate this reality. If one is to consider the Internet as a living space, it is possible to say that it contains many problems. According to data from the New Media Work Group of Alternative Information Society, the leading problems people are exposed to on the Internet are: privacy violations, violation of copyrights, no reference to original source of content, dissemination of content before maturation and confirmation, security of personal data, vague limits of news and commercial information, heavy exposure to commercials with new media features, regeneration of sexual inequality in public, misleading labeling of contents, hate speech, problems of discursive practice and careless use of language [URL1]. People have to take into account the concepts of right and wrong, good and bad while shaping their behavior in an environment that is prone to such problems. Here comes up the concept of ethics. Ethics determines the behavior standards and social norms that guide behaviors (Resnik, 2004). According to Saunders, ethics is the whole set of behaviors accepted and adopted by the public (Dedeoğlu, 2001). Wittmer (1999) defines ethics as a system of values that assesses one's behaviors in terms of being good or bad, right or wrong. The Turkish Language Association defines ethics as a set of behaviors that parties must obey or avoid in various professional branches (TDK, 2014). According to this definition, it is possible to talk about architectural ethics, medical ethics, legal ethics and communication ethics. Being the subject of this study, Internet ethics is a concept recognized under the category of information ethics and has unique rules. According to Karim (2009), Internet ethics may guide users on how the Internet is used and must be used. The Turkish Republic Ministry of National Education

defines Internet ethics as rules that define acceptable and unacceptable behavior on the Internet and lists some of the ethics rules as follows [URL2]:

1) You must not intervene in others' lives in chat-rooms or other places where you chat with people and you must respect other people.
2) You must use appropriate language while choosing a nickname and your nickname must not cause any argument.
3) When someone swears you or intervenes in your private life, your reply must address only the aggressor.
4) You must not make disruptive comments on issues such as gender, religion, language, sex and politics and hurt other people.
5) It is not correct behavior to send messages violating the law, ethics and public order, send false, inappropriate content, messages and information, threaten, swear, share secret information of persons and/or entities and introduce websites.
6) You must not use unlicensed computer software.
7) You must use antivirus software.
8) You must not meet in real life people you meet on the Internet or share your address, telephone, password, or bank account number with them.
9) You must use proper language, be kind and respectful during mutual conversation and discussion.
10) In cases where information is requested through the Internet, the security of the website must be checked and information must not be shared with third persons.
11) You must check documents for viruses before sending.
12) Do not give your password to anyone and change it occasionally (every 3-5 months).

There are many people, entities and institutions working on Internet ethics. For example, a study by Ghazali (2003) with high school students revealed that students do not obey ethics rules in 5 different fields: unauthorized usage of telephone lines, insulting teachers on private web pages, violating copyrights and license rules, online fraud, and hacking others' computers for pleasure. Odabaşı et al. (2007) listed Internet services that contribute to children's non-ethical behaviors as ready-made homework sites, forums and blogs. As a result of their study with students from the Computer Technology department, Namlu and Odabaşı (2007) found that the non-ethical behaviors caused by computers and the Internet are violations of intellectual property (such as using unlicensed software), social effects (distributing information to other people via computer), security problems (hacking), Internet honesty (sending chain e-mails and commercials) and information honesty (unlicensed usage of contents

belonging to other people). Plagiarism is another non-ethical behavior on the Internet to which there is no limit in access thanks to search engines, free databases and libraries. Plagiarism is defined as pretending to be the owner of a work which in reality belongs to someone else and is a problem that causes students to avoid their responsibilities at school (Çakıroğlu et al., 2008). According to McCabe (2005), 10% of students cut and pasted from the Internet in 1999 while the figure rose to 40% in 2005. Unfortunately, most students do not believe that this method of stealing information online is a major problem or a form of theft. Software piracy is another non-ethical behavior among students. According to a study by Özen (2002), studies in various countries reveal that university students use copied software. According to the Internet ethics rules of Information Security Awareness, the Internet must be used solely for communication with family and close friends. One must avoid opening messages from strangers. Pretending to be someone else and thus cheating people is a crime [URL3]. Moreover, the source of contents on Internet must be stated. Permission of resource owner must be granted when necessary. One must not attempt to capture bank account, e-mail account or computer password of others. Unauthorized access to others' computers via Internet must be avoided. Games and images with violent content must be avoided. One must not gamble on Internet. The following sentences are from Janet Reno's letter to parents on Cyber Citizenship and Cyber Ethics: "While most children know that it is wrong to break into their neighbor's house or read their best friend's diary, fewer realize that it's wrong to break into their neighbor's computer and snoop through their computer files. As children learn basic rules about right and wrong in the off-line world, they must also learn about acceptable behavior on the Internet. We need kids to understand that hacking is the same as breaking and entering--that being a hacker doesn't make them "cool" or show their smarts--it makes them a criminal!" (TBD, 2007).

As shown, Internet ethics is clearly an issue that intimately concerns every Internet user no matter what their purpose online is. Informing the public and putting theoretical knowledge into practice is an important stage in developing an e-public. Teachers are undoubtedly the ones to assume the most critical task at this stage. As persons who will shape future generations, teachers are expected to fully grasp the importance of Internet ethics during children's school-age years and display model behavior by using the Internet fairly. The findings of Internet ethics studies performed with students up to now are not very pleasant. All the studies show that people must be taught Internet ethics rules yet students and the public must be made to adopt the concept of Internet ethics. According to Molnar et al. (2008), impressing on students the issue of information technologies will

encourage them to display positive behaviors related to information ethics at their workplaces after graduation. Therefore, studies on Internet ethics are academically and scientifically important and must be supported.

Purpose of the Research

This study was carried out in order to adapt Torun's (2007) Internet ethical attitude scale to university students and compare the ethical attitudes of participant students according to their genders and departments.

Method

Research model and study group

The study was carried out in compliance with the scanning model using 315 students from the Kocaeli University Education Faculty. 21 of the scales were invalidated as they had not been filled in properly, so the answers of 294 students were evaluated. 64,6% of participants are female while 35,4% are male. 28,9% of the participants are studying Science Teaching (ST), 30,6% Turkish Teaching (TT), 23,1% Computer Education and Instructional Technology (CEIT) and 17,3% Primary School Teaching (PST).

Data collection instrument

The "Internet Ethical attitude Scale" (IEAS) was designed by Torun in 2007 and the structural consistency of the scale was tested with an exploratory factor analysis (Torun 2007). The scale consisted of 54 items. Validity reliability of the scale was tested with 1054 students from the 9th, 10th and 11th grades of high schools in Istanbul. In the exploratory factor analysis, the p values of 54 items were found significant at 0.05 level at seven sub-factors. Table 1 presents the sub-dimensions, variance quantities and Cronbach Alpha values of the scale for basic elements analysis.

Table1. Subdimensions of the Internet Ethical Attitude Scale and their variance quantities and reliability coefficients (Torun, 2007).

Factor	Variance Quantity	Cumulative Variance	Cronbach Alpha
1	10,865	10,865	0.920
2	10,082	20,948	0.880
3	8,951	29,898	0.882
4	8,294	38,192	0.866
5	7,859	46,051	0.852
6	7,389	53,440	0.896
7	4,607	58,048	0.822
Total	57.981	58.047	0.953

The total variance quantity explained by seven factors in Torun's (2007) scale is 57,891%. The Alpha inner consistency coefficient calculated

for scored from the whole scale is .953. In Torun's study, items in each factor were examined in order to form sub-dimensions, which were later named. In this context, the first sub-dimension was named "sexual content"; the second was named "computer piracy and disturbance" as it included items related to computer piracy and disturbing others; the third was named "homework plagiarism" as it included items related to plagiarism; the fourth was named "copyrights" as it included items related to downloading unpaid music, programs and films; the fifth was named "Internet addiction" as it included items related to negligence of responsibilities and spending excessive amounts of time on the Internet; the sixth was named "games with violent content" as it was about games with violent content; the seventh was named "cyber honesty" as it refers to lying and introducing oneself with false identity. The scale was filled in within 15-25 minutes. People who filled in the original scale ticked an option between I totally disagree (1) and I totally agree (5) for each statement on the scale. The total scores and sub factor scores of the IEAS are calculated separately. High total score in IEAS mean that Internet ethical attitudes of students are positive while low score indicates negative Internet ethical attitudes. While analyzing the data of the total 28 items in original scale, scores must be entered in opposite direction: I totally disagree (5) and I totally agree (1).

Collection and analysis of data

The data for this study was collected with the IEAS and personal information forms designed by the researchers. In accordance with the primary goal of the study, the researchers resorted to both confirmatory factor analysis and exploratory factor analysis in order to examine whether the IEAS's seven-factor structure previously determined with exploratory factor analysis is a valid model. Exploratory factor analysis may be defined as a multivariate statistical method that aims to find few, new and conceptually significant variables (factors, dimensions) by bringing together many variables related to each other (Büyüköztürk, 2002). For this study, the researchers resorted to basic elements analysis, which takes place in exploratory factor analysis. Arithmetical average, percentage, KMO, Barlett test, factor analysis and reliability analysis were also carried out.

Confirmatory factor analysis (CFA), another factor analysis used in the study, aims to find out to what extent a factorial model comprising observable factors (latent variables) is compatible with real data (Şimşek, 2007). There are many fit indexes used in order to assess model validity in CFA. The most common of these indexes are the Chi-square Fit Test, Goodness Fit Index (GFI), Adjusted Goodness Fit Index (AGFI), Root Mean Square Error (RMR or RMS) and Root Mean Square Error of Approximation (RMSEA). The fact that (χ2/sd) ratio calculated with CFA is lower than 3

may be seen as an indicator of a good fit of the model with real data (Kline, 2005; Sümer, 2000; Çokluk, Şekercioğlu and Öztürk,2010). For model data fit, the GFI and AGFI values are expected to be higher than 90 while the RMS or standardized RMS and RMSEA values are expected to be smaller than .05. The fact that the GFI value and AGFI value are higher than 0.85 and 0.80 respectively while the RMS value is lower than .10 is recognized as criteria for fit of the model with real data (Anderson and Gerbing, 1984; Cole, 1987; Marsh, Balla and McDonald, 1988; Duyan and Gelbal, 2008). The Cronbach alpha inner consistency coefficients were calculated for the scale and subscales. During the exploratory factor analysis, the criteria that were taken into account were: items in each factor in terms of meaning and content must be consistent, factor self values (eigenvalue) must be 1 or over 1, an item must have ".45" or more factor load, the difference between the load values of items in their factors and other factors must be minimum".10" (Büyüköztürk, 2009). The comparison of Internet ethical behaviors according to gender and school department was done with a 2x4 (gender x program) multivariate variance analysis (Manova). In cases where a significant difference was found between the groups with Manova, the process was performed with Anova for each dependent variable. SPSS 20.0 program was used in data analysis for the exploratory factor analysis. Permission to adapt the "Internet Ethical attitude Scale" was granted via e-mail from Torun, who designed the scale. The original scale has exploratory factor analysis but confirmatory factor analysis is missing. In this study both the exploratory and confirmatory analysis were carried out.

Findings

First, exploratory factor analysis was carried out in order to find out to what extent the seven-factor structure determined as a result of basic elements analysis (BEA) performed during the previous validity and reliability study on 1054 secondary school students (Torun, 2007) fits the data obtained during this study. Below are the results of the exploratory factor analysis applied for this study.

Findings on exploratory factor analysis

The exploratory factor analysis was carried out with 54 items on the scale. In order to do the analysis, the Kaiser-Meyer-Olkin (KMO) Test, which tests the sample adequacy, was checked. The fact that the KMO rate is greater than 0.5 indicates that the data set is fit for the Basic Elements Analysis (Kalaycı 2006). The KMO was calculated to be .883 as a result of the analysis. As this value is greater than .70, the researchers came to the conclusion that factor analysis could be done through this data. Secondly, Bartlett's Sphericity Test was checked ($\chi 2$ =6041.203, p=.000) and the data

obtained was found sufficient for factor analysis. Table 2 presents the KMO and Bartlett Test results.

Table2. KMO and bartlett test results of Internet ethical attitude scale.

KMO		,883
Bartlett Test	Chi-Square	6041,203
	Df	1035
	P	,000

Accordingly, the fact that the KMO value is high (.883) and Barlett test is significant ($p<0.00$) showed that the data fit the Basic Elements Analysis. As a result of the factor analysis, a 7-factor structure was obtained that accounted for 52.64% of the total variance and had a self-value (eigenvalue) over 1,00. Table 3 presents the self-values and variance ratios of the factors obtained with the factor analysis.

Table3. Self-values and variance ratios of factors obtained with factor analysis.

Factors	Self-value(Eigenvalue)	Variance	Total Variance
1	11,357	9, 972	9, 972
2	3, 113	9.133	19,105
3	2, 631	8, 421	27.526
4	2, 128	7, 653	35.180
5	1, 829	7, 116	42.295
6	1, 609	6, 906	49.201
7	1, 552	4, 480	53.649
Total	24.219	0.926	52, 645

As a result of the Varimax conversion, we eliminated 8 items with factor load values and other factor load values below ".45". The item numbers of the eliminated items are as follows in Torun's (2007: p.257) thesis: (item 12) Computers in homes must have programs to prevent access to pornographic sites; (item 41) Submitting a free and ready-made homework is wrong; (item 6) Sending people e-mails on behalf of banks and taking hold of their passwords is wrong; (item 43) I connect to the Internet instead of doing homework; (item 45) I like sending e-mails from others' e-mail accounts without permission; (item 46) sending people e-mails on behalf of banks and learning their credit card information is appropriate; (item 47) it is wrong to take a part of a homework on the net without indicating the source; (item 57) swearing in chat rooms disturbs me. After eliminating these items, the factor loads were reviewed.

Factor loads constitute the basic criteria while assessing factor analysis results. The factor loads of the scale items are between ".458" and ".810". Table 4 presents the factor loads and total correlation of the items on Internet Ethical attitude Scale.

Table4. Results of exploratory factor analysis of Internet ethics scale.

Item	Factor Load Values							Total Correlation of Items
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	
M53	.784							.925
M41	.768							.925
M42	.743							.925
M14	.692							.925
M27	.603							.925
M43	.536							.925
M48	.498							.925
M30	.487							.926
M8	.459							.926
M20	.458							.926
M26		.715						.924
M21		.700						.925
M11		.698						.924
M51		.680						.925
M44		.581						.925
M15		.536						.924
M19		.480						.924
M10		.467						.924
M12			.810					.923
M40			.771					.923
M28			.771					.923
M34			.766					.923
M18			.676					.923
M29				.671				.924
M45				.636				.924
M25				.609				.925
M50				.552				.925
M4				.539				.926
M9				.509				.925
M5					.713			.926
M1					.688			.927
M46					.634			.925
M54					.603			.923
M49					.585			.924
M24					.577			.926
M22					.571			.925
M13						.786		.924
M2						.662		.926
M6						.627		.927
M32						.576		.924
M52						.504		.925
M38						.454		.926
M16							.650	.926
M7							.626	.926
M39							.610	.926
M23							.517	.926

The load values on the first factor vary between .458 and .784. We observed that items in the first factor are gathered under the title of "computer piracy and disturbing people". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "computer piracy and disturbing other people" is .841.

The load values on the second factor vary between .467 and .715. We observed that items in the first factor are gathered under the title of "copyrights". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "copyrights" is .834.

The load values on the third factor vary between .676 and .810. We observed that items in the first factor are gathered under the title of "games with violent content". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "games with violent content" is .908.

The load values on the forth factor vary between .509 and .671. We observed that items in the first factor are gathered under the title of "Internet addiction". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "Internet addiction" is .775.

The load values on the fifth factor vary between .571 and .713. We observed that items in the first factor are gathered under the title of "homework plagiarism". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "homework plagiarism" is .808.

The load values on the sixth factor vary between .454 and .786. We observed that items in the first factor are gathered under the title of "sexual content". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "sexual content" is .772.

The load values on the seventh factor vary between .517 and .650. We observed that items in the first factor are gathered under the title of "cyber honesty". The alpha inner consistency coefficient calculated for scores obtained from the subscale of "cyber honesty" is .599.

The alpha inner consistency coefficient calculated for the scores from the whole scale is .926. Factors obtained as a result of the factor analysis in this study and items below are the same as the items and factors in Torun's (2007) study.

Findings on confirmatory factor analysis (CFA)

Confirmatory factor analysis was applied to the scale as well as exploratory factor analysis. The most frequently used statistics for model-data fit with confirmatory factor analysis are Chi-square ($\chi 2$), $\chi 2$/sd, RMSEA, RMR, GFI and AGFI. The fact that the $\chi 2$/df ratio is lower than 3, the GFI and AGFI values are higher than 0.90, and the RMR and RMSEA values are lower than 0.05 indicate model-data fit (Jöreskog and Sorbom, 1993; Çokluk, Şekercioğlu and Öztürk, 2010). Yet, the criteria were taken as

>.90 for GFI, CFI, NFI, RFI and IFI and < .05 for RMSEA and RMR, as is usually the case in Fit indexes. The results of the confirmatory factor analysis carried out in this study are presented in Table 5.

Table5. Values of Internet ethical attitude scale (Goodness-of-Fit-Indices).

Chi-square	df	P-Value	CFI	NNFI	AGFI	GFI	SRMR	RMSEA	90% C.I RMSEA
2840.78	956	0.000	0.82	0.80	0.86	0.80	0.084	0.082	0.079-0.086

Figure 1 presents the diagram of confirmatory factor analysis carried out to test the validity of the Internet ethical attitude scale. The model formed for the theoretical structure of the Internet ethical attitude scale is seen in Figure 1. According to the fit index results obtained from the confirmatory factor analysis for this model's fit, the fit between the model and the data is high. The fact that the result ($\chi 2/sd=2,97$) is lower than 3 indicates perfect fit (Kline, 2005; Sümer, 2000; Çokluk, Şekercioğlu and Öztürk, 2010). When it comes to the RMSEA, the 0.082 value indicates that there is a good fit level. A RMSEA value less than .05 indicates perfect fit while a value less than .08 indicates good fit (Jöreskog ve Sörbom, 1993; Çokluk, Şekercioğlu ve Öztürk, 2010). The GFI and AGFI indexes are .80 and .76. The fact that the GFI and AGFI are over .90 means good fit (Hooper, Caughlan and Mullen, 2008; Çokluk, Şekercioğlu and Öztürk, 2010). It is possible to say that the GFI and AGFI indexes in this study are low. The CFI was calculated to be 0.82. A CFI value over .90 means good fit (Sümer, 2000; Çokluk, Şekercioğlu and Öztürk, 2010). The value obtained for this study is low as well. Additionally, the fact that the model-data fit indicators CFI, NNFI, AGFI values are over 0.80 means that the model-data fit is good (Duyan and Gelbal, 2008). The fact that the SRMR value which gives the model fit related to standardized errors of the model is lower than 0.08 (Hu and Bentler, 1999; Duyan and Gelbal, 2008) is a strong indicator of the fit between the model and the data. When all the values of model-data fit are taken into account, it is possible to suggest that the model has perfect fit with the data and therefore the scale has structural reality. It seems acceptable that the items of the scale can measure the Internet ethical attitude variable.

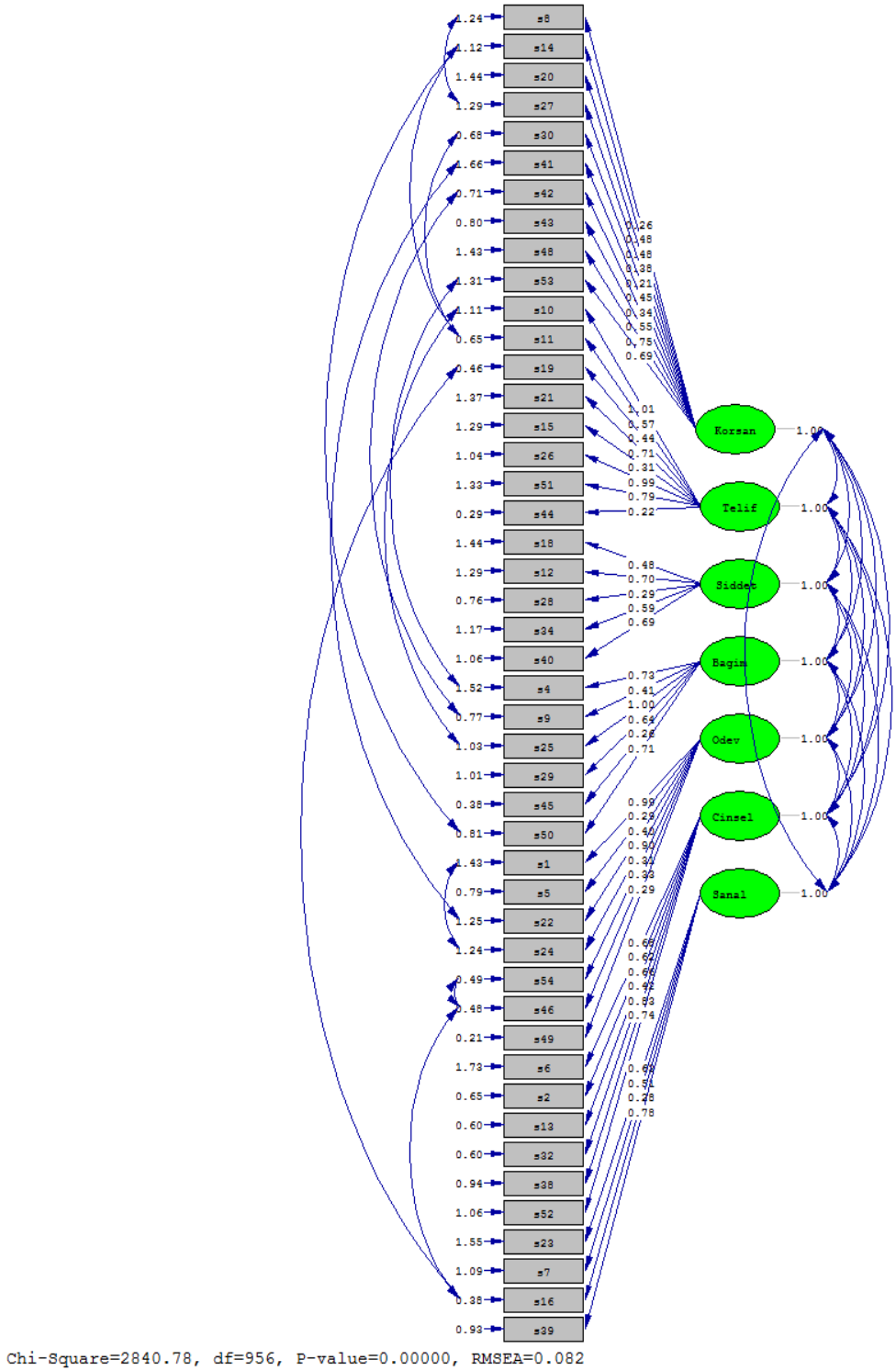

Figure1. Diagram related to the Internet ethical attitude scale

Comparison of Internet ethical attitude according to gender and school program

The results of the two-factor (gender x program) MANOVA applied to the IEAS factor scores showed that there are significant differences between the aforementioned factor scores of students according to gender (Wilks' Lambda=0.65, F(7,280)=20.813, p<.001), program (Wilks' Lambda=0.74, F(21,804)=4,146, p<.001) and common effects of gender and program (Wilks' Lambda=0.88, F(21,804)=1,731, p<.05). The ANOVA results and mean and standard deviations of groups related to the IEAS factor scores are shown in Table 6.

Table6. ANOVA Results for IEAS Factor Scores According to Gender and Program

IEAS	Gender	Program	$\overline{X}$	S	Fgender Sd	Fprogram Sd	FCXP Sd
Factor1	Female	ST	49.015	2.346	22.951**	7.308**	4.970**
		TT	48.660	2.552	(7, 286)	(7, 286)	(7, 286)
		CEIT	48.212	2.484			
		PST	48.897	1.618			
		Total	48.757	2.301			
	Male	ST	46.882	4.635			
		TT	47.950	4.284			
		CEIT	42.000	10.186	Scheffe Test for Program (Significant Differences)		
		PST	46.417	4.440			
		Total	45.744	7.317	ST-CEIT (3.573*)		
	Total	ST	48.588	3.036	TT-CEIT(3.329*)		
		TT	48.344	3.428	CEIT-PST(3.299*)		
		CEIT	45.014	8.086			
		PST	48.313	2.731			
		Total	47.639	4.952			
Factor2	Female	ST	27.220	6.519	15.249**	11.834**	1.545
		TT	28.940	6.425	(7, 286)	(7, 286)	(7, 286)
		CEIT	24.242	7.180			
		PST	23.256	6.298			
		Total	25.914	6.875			
	Male	ST	23.411	6.205			
		TT	25.675	6.692			
		CEIT	17.686	7.545	Scheffe Test for Program (Significant Differences)		
		PST	22.500	10.570	ST-CEIT (5.591*)		
		Total	22.318	8.095	ST-PST (3.380*)		
	Total	ST	26.458	6.601	TT-CEIT (6.621*)		
		TT	27.488	6.709	TT-PST (4.410*)		
		CEIT	20.867	8.025			
		PST	23.078	7.404			
		Total	24.894	7.574			
Factor3	Female	ST	21.265	4.444	108.671**	8.077**	3.132*
		TT	22.100	3.315	(7, 286)	(7, 286)	(7, 286)
		CEIT	20.364	5.011			
		PST	20.513	4.465			
		Total	21.060	4.306			
	Male	ST	12.824	7.108			
		TT	17.025	5.375			

		CEIT	10.971	6.089	Scheffe Test for Program (Significant Differences)		
		PST	15.333	7.571	ST-CEIT (4.047*)		
		Total	14.038	6.652	TT-CEIT (4.315*)		
	Total	ST	19.576	6.075	CEIT-PST (3.764*)		
		TT	19.844	5.014			
		CEIT	15.529	7.292			
		PST	19.294	5.717			
		Total	18.673	6.243			
Factor4	Female	ST	24.911	3.768	4.778*	3.163*	3.599**
		TT	24.880	4.255	(7, 286)	(7, 286)	(7, 286)
		CEIT	25.242	3.913			
		PST	24.000	5.529			
		Total	24.758	4.317			
	Male	ST	24.294	4.713			
		TT	25.600	4.056			
		CEIT	21.029	5.987	Scheffe Test for Program (Significant Differences)		
		PST	22.583	7.867	ST-CEIT (1.714*)		
		Total	23.266	5.667	TT-CEIT (2.126*)		
	Total	ST	24.788	3.952			
		TT	25.200	4.160			
		CEIT	23.073	5.478			
		PST	23.666	6.101			
		Total	24.323	4.866			
Factor5	Female	ST	28.764	4.398	19.967**	3.792**	4.158**
		TT	28.220	5.195	(7, 286)	(7, 286)	(7, 286)
		CEIT	30.970	4.164			
		PST	26.333	7.324			
		Total	28.572	5.445			
	Male	ST	23.352	5.207			
		TT	28.050	4.679			
		CEIT	25.429	6.735	Scheffe Test for Program (Significant Differences)		
		PST	24.333	7.202	TÖ-SÖ (2.281*)		
		Total	25.291	6.020	BÖTE-SÖ (2.254*)		
	Total	ST	27.682	5.033			
		TT	28.144	4.945			
		CEIT	28.117	6.252			
		PST	25.862	7.274			
		Total	27.608	5.774			
Factor6	Female	ST	28.573	2.546	53.807**	1.594	0.532
		TT	28.120	2.952	(7, 286)	(7, 286)	(7, 286)
		CEIT	27.939	3.656			
		PST	28.667	1.752			
		Total	28.325	2.742			
	Male	ST	24.823	4.626			
		TT	24.700	5.369			
		CEIT	23.143	5.836	Scheffe Test for Program (Significant Differences)		
		PST	25.500	4.461	ST-TT (1.223*)		
		Total	24.531	5.323	ST-CEIT (2.352*)		
	Total	ST	27.823	3.395	TT-PST(1.321*)		
		TT	26.600	4.511	CEIT-PST (2.451*)		
		CEIT	25.470	5.432			
		PST	27.921	2.924			

		Total	26.921	4.315			
Factor7	Female	ST	16.529	2.662	4.700*	2.569*	1.840
		TT	16.180	3.198	(7, 286)	(7, 286)	(7, 286)
		CEIT	16.061	3.535			
		PST	16.077	2.794			
		Total	16.211	2.982			
	Male	ST	15.823	2.429			
		TT	16.400	3.272			
		CEIT	13.943	3.596	Scheffe Test for Program (Significant Differences)		
		PST	15.083	3.369	ST-CEIT(1.417*)		
		Total	15.312	3.406	TT-CEIT (1.307*)		
	Total	ST	16.388	2.619			
		TT	16.277	3.215			
		CEIT	14.970	3.697			
		PST	15.843	2.935			
		Total	15.932	3.164			

* p<.05; ** p<.01

According to Table 6, the Internet ethical attitudes of female and male students differed significantly according to Factor 1 [F(7, 286)=22.951, p<.01], Factor 2 [F(7, 286)=15.249, p<.01], Factor 3 [F(7, 286)=108.671, p<.01], Factor 4 [F(7, 286)=4.778, p<.01], Factor 5 [F(7, 286)=19.967, p<.01], Factor 6 [F(7, 286)=53.807, p<.01] and Factor 7 [F(7, 286)=4.700, p<.01]. According to the results, it is possible to say that the ethical attitudes of girls are more positive than those of boys on the issues of "computer piracy and disturbing other people, copyrights, games with violent content, Internet addiction, homework plagiarism, sexual content and cyber honesty". In other words, female students are more careful and aware on Internet ethics.

The Internet ethical attitude of students from different school programs differed significantly according to Factor 1 [F(7, 286)=7.308, p<.01], Factor 2 [F(7, 286)=11.834, p<.01], Factor 3 [F(7, 286)= 8.077, p<.01], Factor 4 [F(7, 286)=3.163, p<.01], Factor 5 [F(7, 286)=3.792, p<.01], and Factor 7 [F(7, 286)=2.569, p<.01]. According to the Scheffe test results, the ethical attitudes of students from the CEIT program are lower than those of students from ST, TT and PST on the issues of "computer piracy and disturbing other people, copyrights, games with violent content, Internet addiction, homework plagiarism and cyber honesty".

Common effects of gender and school program on the IEAS factor scores were found to be significant (.05). It is seen to be significantly different according to Factor 1 [F(7, 286)=4.970, p<.01], Factor 3 [F(7, 286)=3.132, p<.05], Factor 4 [F(7, 286)=3.599, p<.01] and Factor 5 [F(7, 286)=4.158, p<.01]. According to the Scheffe test results, it is possible to say that gender and school program have common effects on the sub-factors of

"computer piracy and disturbing other people, games with violent content, Internet addiction and homework plagiarism".

Conclusion and Discussion

The 54-item IEAS for high school students was designed by Torun (2007). The scale was applied to 1054 students from state schools in İstanbul (high school 9th, 10th and 11th grade) and the factor analysis result showed that the IEAS had a seven-factor structure. The fact that studies on Internet ethics are quite limited in our country (Torun, 2007; Yaman, Yaman and Horzum; Kayak, 2011) is quite striking. Therefore, Torun's study was applied to 294 students from the Kocaeli University Teacher Education Faculty in order to adapt the scale to university students. After the scale was applied, exploratory and confirmatory analyses were carried out on the data obtained from the students. The original scale included 54 items; however 8 of the items were eliminated as they showed a low factor load and the scale took its final form with 46 items. The seven factors that occurred as a result of Torun's (2007) study (sexual content, computer piracy and disturbing other people, homework plagiarism, copyrights, games with violent content, cyber honesty, Internet addiction) and items under those factors were distributed in this study as in the original scale. During this study, the IEAS was adapted to university students and a Manova analysis was carried out in order to find out whether Internet ethical attitudes of students differed according to their gender and school program. The results showed that female students had higher total scores in IEAS and sub-factor scores than male students. It is possible to say that female students are more conscientious than male students on the issue of Internet ethical attitudes. This finding is consistent with other studies in the literature (Gattiker and Kelley, 1999; Ghazali, 2003; Gutek and Larwood, 1987; Haines and Leonard, 2007; Kayak, 2011; Khazanchi, 1996; Kreie and Cronan, 1998; Mert, 2003; Rawwas et al., 2004; Torun, 2007; Uysal, 2006; Uysal, 2006). As in other factors, attitudes related to "homework plagiarism" are higher in female students than male students. There are similar results in the literature (Çetin, 2007; Davis, Grover, Becker and McGregor, 1992; Ersoy and Özden, 2011; McCabe et al., 2008; Özgüngör, 2008; Szabo and Underwood, 2004).

The Internet ethical attitudes of students from different school programs significantly differ at a level of .01 according to Factor 1, Factor 2, Factor 3, Factor 4, Factor 5 and Factor 7. Attitudes of students from the CEIT program on issues of "computer piracy and disturbing other people, copyrights, games with violent content, Internet addiction, homework plagiarism, and cyber honesty" are lower than those of students from the ST, TT and PST programs. Uysal (2006) stated in his study as well that students from the Computer and Technology Teaching program show the most

unethical behaviors. According to the result of the same study, the most ethical behaviors are displayed by students from prospective Foreign Language teachers.

A common effect of gender and school program together on the IEAS factor scores was found to be3 significant at a level of .05 as well. It differs significantly according to Factor 1, Factor 3, Factor 4 and Factor 5. It is possible to judge from the Scheffe test results that gender and school program have a common effect on the sub-factors of "computer piracy and disturbing other people, games with violent content, Internet addiction and homework plagiarism".

When the Internet's growing popularity and increasingly falling user ages are taken into account, it would be useful to begin training children on Internet ethics in primary school. Problems that may arise would be minimized with well-structured training programs in higher education programs and ethics education in information technologies **(Brunner, 1991; Miller, 1988).** The only way to establish a clean and well-functioning society is to validate the rules of ethical values in all areas of life with no concession from their values and meanings and make it live in every part of society, including individuals **(TBD, 2007).** Studies on Internet ethics are quite limited in our country. Therefore, the literature must be improved with new studies on Internet ethics. Students must be informed about issues such as the harmful effects of the Internet, copyrights, Internet addiction, and cyber bullying and they must become aware of precautions.

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