Öneri.C.9.S.36.
Temmuz 2011.15-27.

INSTANT MESSAGING AND FACE TO FACE COMMUNICATION PREFERENCES: AN INVESTIGATION AMONG UNIVERSITY STUDENTS

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Abstract: Due to the increase in the usage of e-communication, many authors suggest that young generation tend to use electronic messaging more than traditional face to face communication. However, the number of research findings is still insufficient regarding this issue. The aim of this study is to examine university students' preferences between these two alternative communication ways. In order to examine this subject, a survey consisting of 36 questions was applied to 419 university students. The questionnaire focused on four main dimensions of communication; information richness, ease of use/usefulness, emotion express and social presence. Results of the analysis showed that students prefer face to face communication for emotion express, usefulness and social presence whereas they prefer IM for information richness.

Keywords: Instant Messaging, Face to Face Communication, Usage of Emoticons, Information Richness, Ease of Use, Usefulness, Emotion Express, Social Presence.

HIZLI İLETİ VE YÜZYÜZE İLETİŞİM TERCİHLERİ: ÜNİVERSİTE ÖĞRENCİLERİ ÜZERİNDE BİR ARAŞTIRMA

Özet: Birçok yazar elektronik iletişimde meydana gelen gelişmeler nedeniyle yeni neslin elektronik mesajlaşmayı geleneksel iletişim yöntemlerinden daha fazla kullandığını belirtmektedir. Bu görüşü destekleyen araştırma bulgularının ise sınırlı sayıda olduğu görülmektedir. Bu araştırma Türk öğrencilerinin hızlı ileti ve yüz yüze iletişime ilişkin tercihlerini incelemektedir. Bu amaçla 36 sorudan oluşan bir anket formu Marmara Üniversitesi'nin 419 öğrencisi tarafından yanıtlanmıştır. Anket formu bilgi zenginliği, kullanım kolaylığı/yararlılık, duygu aktarımı ve hazır bulunma olmak üzere iletişimin dört boyutuna odaklanmıştır. Analiz sonuçları öğrencilerin duygu aktarımı, yararlılık ve hazır bulunma boyutları için yüz yüze iletişimi; bilgi zenginliği için ise hızlı iletiyi tercih ettiklerini göstermektedir.

Anahtar Kelimeler: Hızlı İleti, Yüz Yüze İletişim, His Simgeleri, Bilgi Zenginliği, Kullanım Kolaylığı, Yararlılık, Duygu Aktarımı, Hazır Bulunma.

I. Introduction

With the spread of distributed computer networks, the number of computer-mediated communication tools has been constantly growing. Today, there are numerous tools that provide those people communicating in an asynchronous text-based form, with opportunities of communicating in a synchronous audio-visual form which is very similar to face to face (F2F) communication. Instant messaging (IM) is a technological tool that enables people to communicate synchronously even in different locations with a low communication cost. This type of communication has a wide range of acceptance among different interest groups particularly by the young generation due to its characteristics of speed, flexibility, and reliance on text-tends. The young generation prefers this type of technology as a means of communication while chatting with their friends and putting on new peers and dealing with professional projects. Even though the usage of IM is increasing, studies of Huang and Yen [1] and Lancaster et al [2] show that face-to-face (F2F) communication is still perceived as being more valuable than IM in terms of putting on new relationships.

The aim of this paper is to evaluate university students' perceptions related to two communication context; F2F and IM. The study aims to answer the question: "what are the university students' preferences between F2F communication and IM communication regarding different dimensions?" Information richness, ease of use/usefulness (technology acceptance model), emotion express (reduced social cues theory) and social presence theory helps us to understand the factors that affect these preferences.

II. Theoretical Background

IM is defined as "a tool which allows for near-synchronous computer-based one-on-one communication" [3]. The first major player to enter the arena of IM was AOL, which launched its own version of IM with a component used for managing all the incoming

and outgoing messages and the list of friends. This component is popularly known as buddy list. Soon, Microsoft and Yahoo! followed AOL's trail. As a result, IM and Yahoo! messenger appeared on the market with a variety of impressive new services. Gradually, with a sudden rise in the popularity of the Internet, IM became a major area of interest for the young generation (Introduction to Instant Messaging).

Nowadays, IM is one of the most popular applications of Internet. According to a report of "Pew Internet & American Life Project", 85% of teenagers between 12-17 engage at least occasionally in some form of electronic personal communication, which includes text messaging, sending e-mail or IM, or posting comments on social networking sites [4].

As a result of all these developments, there is a growing interest toward this issue. Previous research has focused mainly on information richness, the ease of use and socializing effects of IM. Even though transfer of feelings is also crucial, the effectiveness of IM in this context was neglected. This study also aims to provide better understanding about communication preferences of students between IM and F2F by undertaking the issue from the perspective of all factors revealed in literature.

II.1. Information Richness/Communication Quality

An important theory and research subject regarding the quality of communication via IM is the information richness theory (IRT). The main idea behind the theory is; "Rich information can change a recipient's understanding more quickly than lean information, which will change the recipient's understanding, but will require more time to achieve the same result" [2].

The original research of Daft and Lengel [5] [6] posited a hierarchy among communication media, with face-to-face communication modes being the richest and all other media being less rich. Therefore, it seems reasonable that one could assess the media richness of a technology-based medium by assessing how closely it approximates the richness of face-to-face communication experience [7].

Daft and Lengel [6] stated that when people select a communication channel, not only the information exchange capacity, but also evaluation of the costs of using this channel is also taken into consideration as a crucial factor. When dealing with highly equivocal tasks, choosing communication channels with high information richness is very important in order to eliminate the cost of potential misunderstandings.

As a result of the increasing popularity of Computer Mediated Communication (CMC), Markus [8] also recommended a new look at the dimensions of richness related to information sharing in organizations. If richness is an attribute related to reduction of equivocality in the organization's information processing, then it was possible to create a new concept that included multiple addressability, external recording, and computer-processable memory, which did not exist in traditional media.

Many authors in information richness theory area agree that immediate feedback and number of cues (expressions, gestures, tones, etc.) are very important factors in transmitting rich information. A media providing these factors is perceived to be better at transferring information than unidirectional communication tools [1,6,9].

Although Daft and Lengel [5] [6] suggest face-to-face communication as the richest media, due to the massive progress in computer based technology today this suggestion of the authors has become debatable. Today IM has advantages such as, presence awareness functionality which means "having a general sense of who is around and what they are doing" [10], and accessibility of dialogues from history, unlike F2F communication. Mesch [11] found that individuals, residing in distant locations or who first met a friend online or knew a person for a while would prefer to communicate online. As a result, considering university students' familiarity to new technologies and their eagerness to make new friends with low costs it may be hypothesized that;

H_1: Students will prefer IM for information richness dimension

II.2. Ease of Use and Usefulness

Another relevant theory to the present study is the technology acceptance model (TAM). TAM was originally developed by Davis et al [12] to explain the users' acceptance or rejection of a new technology. The model suggests that when users are presented with a new technology, two main variables; perceived ease of use and perceived usefulness; influence their decision about how and when they will use it. Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort. This follows from the definition of ease: "freedom from difficulty or great effort". But perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her performance. This follows from the definition of the word useful: "capable of being used advantageously" [13].

The model also was developed with addition of some other drivers such as subjective norm, voluntariness, image, and cognitive instrumental processes by Venkatesh and Davis [14] and trust, perceived financial cost by Tung et al [15].

Consistently with the TAM model, Kelley [16], Girard and Sullivan [17] and Xio et al. [18] stressed the increasing popularity of IM in university and working environments, because of its ease of use and perceived usefulness. According to these studies, students and professionals believe that IM is one of the most effective channels for disseminating information quickly; reaching broad audiences and monitoring trends, thus increasing students' and employees' productivity. In the light of these findings it may be asserted that;

H_2: When usefulness and ease of use dimensions are considered students prefer IM rather than F2F.

II.3. Emotion Express and Use of Emoticons

The Reduced Social Cues (RSC) Theory developed by Kiesler [19], states that computer mediated communication (CMC) transmits less social and contextual cues than F2F communication. Kiesler [19] divides social cues into two categories: static and dynamic social cues. Static social cues include information related to place, position and person whereas dynamic social cues include personal information transmitted in a typical F2F interaction, such as facial expressions or gestures. She argues that in CMC, "senders have no way to link the content or tone of messages to receivers' responses so they cannot evaluate how their messages are being received". From this point of view, Hiltz and Johnson [20] asserted that CMC is an unsuitable tool for social-emotional communication. Thus it is hypothesized as;

H_3: When emotion express dimension is considered, students will prefer F2F rather than IM.

In respect of emotion express, some studies focus on the gender differences in F2F and IM. Wolf [21] also supported this idea and additionally, Lee [22] stressed that female conversations contain more emotional subject matters. Similarly, Pierce [23] found that, females feel more comfortable talking with others online through their social networking site (e.g., MySpace) than do males. Thus, it is hypothesized that;

H_4: There will be a significant difference between perceptions of male and female participants in terms of emotion expression dimension.

There are many studies indicating that F2F and CMC are very similar in terms of environmental conditions. Radford [24] found variety of socio-emotional/relational aspects in the chat reference transcripts, which support the idea that CMC is no less personal than F2F.

Furthermore it is supported that CMC does not completely lack non-verbal information. Because it has its own version of non-verbal displays, namely 'emoticons' (a portmanteau of the English words emotion (or emote) and icon) created with typographical symbols that resemble facial expressions to convey emotional content in written or message form [25,26].

Originally, Scot Fahlman created emoticons for CMC ":-) and :-(" with a specific suggested that they will be used to express emotion in 1982 [27]. Today there are different emoticon collections online in several different sites such as MSN and Yahoo. Some examples of emoticons are presented in Table.1.

Table.1. Some examples of emoticons in IM

				
Happy	Sad	Crying	Angry	Winking

Similar to non-verbal cues in F2F communication, emoticons in IM also help to accentuate or emphasize a tone or meaning during message creation and interpretation. Emoticons help to transfer instant feelings and moods in a more direct and noticeable way [25].

According to a study conducted by Rivera et al [28], emoticons are found to have positive impact on the communication process. According to this study users of IM were found to be more satisfied with the system when they were provided with emoticons. One step further, Derks et al (a) [29], studied the difference between F2F and CMC in respect to emotional communication. Results of the study show that emotional communication, online and F2F are surprisingly similar in respect of emotional communication. Furthermore, online communication even seems to reinforce rather than inhibit the expression of emotions as a result of the presence of emoticons.

Additionally the correlation between the contexts and emoticon usage has been investigated by some academicians. An example is the study of Yiğit [30], where the participants of socio-emotional contexts discussion board and participants in task oriented groups were compared in terms of their perspectives of usage of emoticons.

Time constraint may be another reason for using emoticons. Stone and Posey [31] stated that groups using concise messages or even symbols or abbreviations could possibly perform better under time constraints.

Some researches focus on the differences in usage of emoticons between genders. A study conducted by Wolf [21] found that both female and male users are equally likely to use emoticons. Another study conducted by Lee [22] reveals that male participants tend to use more emoticons while chatting with a female. However

female participants did not show any difference due to the gender of the other party.

II.4. Social Presence Theory/Socialization

The final theory that this study is structured based on is social presence theory. Grinter and Paylen [32] explains social presence as the ability of a communication medium to allow a group member to feel the presence of the other group members and the feeling that the group is jointly involved in communicative interaction. Biocca and Harms [33] also state that social presence is the moment-to-moment awareness of co-presence of a mediated body and the sense of accessibility of the other being's psychological, emotional, and intentional states.

The expected social presence degree of a communication medium for task equivocality and socialization processes is circumstantial. According to social presence theory, media with a high degree of social presence is better suited to ambiguous and equivocal tasks that require resolution of different views and opinions among people. Conversely, lean media are better for uncertain tasks that require the quick transmission of information and facts. The theory further argues that communication media that convey more cues would lead to a higher degree of social presence. Therefore, media that provide more communication cues are judged as being warm, personal, sensitive, and sociable [34]. IJsselsteijn et al. [35] also mentioned that supporting intimate and immediate behaviors seems to be particularly relevant for engendering social presence through media.

Considering students' requirements such as being a team member, co-operating in Project groups and their style of developing relationships, it can be expected that among university students, F2F communication will be preferred for social presence. Thus, it may be asserted that;

H_5: When social presence dimension is considered, students will prefer F2F rather than IM.

III. RESEARCH

III.1. Aim of the Study

The research is a descriptive study which investigates the preferences of university students between ***Instant Messaging (IM)*** and ***Face to Face (F2F)*** communication in respect of different criteria. These criteria of preferences are ***information richness***, ***emotion express***, ***ease of use/usefulness*** and ***social presence***. Additionally, in parallel with previous research, gender differences regarding their preferences related to the usage of emoticons in IM is examined.

III.2. Instrument

The questionnaire used in this study consists of four parts. The first part which aims to explore the demographic characteristic of the respondents has 8 questions. The second part includes 8 items on virtual environment. These items are administered on a 5-point scale with responses ranging from "completely disagree" to "completely agree". These items aim to evaluate the participants' feelings about emoticon and mimic usage and their feeling about virtual environment. The third part consists of 18 items and each respondent was asked to answer these questions simultaneously both for IM and F2F. These 18 items were assessed on 5-point Likert scale, with responses ranging from "completely inadequate" to "very adequate". These items evaluate the preferences of the students between F2F and IM. In this part of the questionnaire, the main focus was to evaluate different dimensions called; information richness, emotion express, ease of use/ usefulness and social presence. The last part of the questionnaire includes two open ended questions asking respondents for which purpose they use IM or F2F.

The questionnaire was developed in accordance with existing literature to compare the preferences between F2F and IM. This questionnaire is based on Lanchester's [2] instrument which aims to show the preferences of students between IM and e-mail. In order to adapt the questionnaire into Turkish, back translation method was used. For this purpose, all items were first translated into Turkish and back-translated into English by an academician from English Literature Department. After the translation process was accomplished, in the context of face validity study, the instrument was reviewed by a professor, an associate professor and two research assistants of the relevant field. As a result, some items were removed and some new items were added in order to create a proper questionnaire for our research purpose. The questionnaire was pre-tested with a sample of 37 students and minor changes to improve clarity were made based on the feedback received. Finally the internal consistency score Cranbach's Alpha was found to be 0,777 (The survey is presented in the appendix).

III.3. Participants

This study has been conducted on students of Marmara University Anadolu Hisarı Campus which has approximately 2500 students. Convenience sampling method was used and a total of 630 questionnaires were distributed.

Researchers distributed surveys to volunteer students from each department (Business Administration, Sport Academy, Labour Economics and Industrial Relations department). Students were required to fill and drop the survey in to the box that was placed nearby the

campus exit. On the first day 380 surveys was distributed. Only 312 of them returned and 285 of them was appropriate for analysis. A week later 250 more surveys was distributed to 134 volunteer students of which was appropriate for analysis. In order to test whether there occurred any kind of bias between weeks' responses the statistical analysis was conducted. Results showed no significant differences between two weeks'. At the end 419 usable responses were received, providing a response rate of approximately 66,5%. This response rate can be considered to be relatively high.

III.4. Results

III.4.1.Descriptive Statistics

Descriptive information about sample is summarized in Table.2. Sample profile can be summarized as followed. 44,6% of total respondents are female and 55,4% is male. Only 3,6% of sample is married.

Table.2. Descriptive Data

		Frequency (n)	Percentage (%)
Gender	Male	232	55,4
	Female	187	44,6
Marital Status	Single	404	96,4
	Married	15	3,6
Department	Business Administration	321	76,6
	Sport Academy	68	16,2
	Labor Economics and Industrial Relations	30	7,2
Work Status	Working	121	28,9
	Not working	298	71,1
IM usage frequency	More than once in a day	170	40,6
	Once in a day	91	21,7
	More than once in a week	109	26,0
	Once in a week	49	11,7

The sample is largely composed from the students who are attending business administration department with 76,6%. 16,2% is from Sport Academy and 7,2% is from Industrial Relationship.

Work status of sample indicates that 28,9% of sample is working and the rest of is not. 40,6% of respondents indicated their IM usage as more than once in a day, 21,7% as once in a day, 26% as more than once in a week and finally 11,7% as once in a week.

III.4.2.Factor Analysis, Internal Consistencies, and Confirmatory Factor Analysis for IM, F2F and VE

In this section, the factorial structure and internal consistency of the preference scale were investigated separately for IM, F2F and VE.

For IM, Principle Component Factor Analysis was conducted by 16 items and Keiser-Meyer-Olkin (KMO) value was 0.868 exceeding the recommended value of .50 and Bartlett's test of sphericity correlation matrix was significant at 2195,554.

For F2F, Principle Component Factor Analysis was conducted by 16 items and Keiser-Meyer-Olkin (KMO) value was 0,892 exceeding the recommended value of 0,50 and Bartlett's test of sphericity correlation matrix was significant at 2311,980.

Principal Component Factor Analysis with varimax rotation revealed the presence of four same factors with eigenvalues exceeding 1 for both IM and F2F. For IM varimax rotation explained a total variance of 58,75 % and for 64,61% F2F. Result of factor analysis for IM and F2F are presented in Table.3 and 4.

Table.3. Results of principal components analysis of four dimensions of preference scale for IM (N=419)

Item	*EE*	*SP*	*IP*	*Use*
16. Allowing to convey emotions exactly	,761			
17. Allowing to convey emotions correctly	,734			
18. Allowing to feel the emotions of others	,677			
10. Allowing to clarify ambiguous issues	,646			
11. Ease of resolving disagreements	,637			
5. Allowing to develop friendship more quickly		,738		
4. Feeling closer to friends and/or team members		,718		
2. More funny to communicate		,661		
6. Allowing better social interaction		,581		
3. Ease to communicate		,549		
8. Conveying a large amount of information faster			,804	
7. Allowing to communicate more Information			,756	
9. Ease of access to people/knowledge			,730	
12.Useful tool for working				,722
13. Useful tool for developing networks				,591
14. Useful tool for interacting with friends				,583
Variance Explained (%)	17,54	15,61	14,17	11,43
Cronbach's α (,863)	,779	,774	,756	,663

Table.4. Results of principal components analysis of four dimensions of preference scale for F2F (N=419)

Item	*SP*	*EE*	*IR*	*Use*
6. Allowing better social interaction	,801			
2.More funny to communicate	,775			
3.Ease to communicate	,717			
5.Allowing to develop friendship more quickly	,702			
4.Feeling closer to friends and/or team members	,399			
18. Allowing to feel the emotions of others		,758		
17. Allowing to convey emotions correctly		,756		
16. Allowing to convey emotions exactly		,668		
11. Ease of resolving disagreements		,651		
10. Allowing to clarify ambiguous issues		,499		
8.Conveying a large amount of information faster			,774	
7. Allowing to communicate more information			,732	
9. Ease of access to people/knowledge			,720	
14. Useful tool for interacting with friends				,761
13. Useful tool for developing networks				,721
12. Useful tool for working				,573
Variance Explained (%)	22,60	17,90	12,24	11,61
Cronbach's α (,879)	,815	,768	,676	,663

For the second part of the questionnaire which aims to measure participants' feelings about virtual environment and usage of emoticons; Principle Component Factor Analysis was conducted by 8 items and Keiser-Meyer-Olkin (KMO) value was 0,763 exceeding the recommended value of 0,50. Bartlett's test of sphericity correlation matrix was significant at 694,757. The results of factor analysis for virtual environment are presented in Table.5.

In the next step, we performed confirmatory factor analysis (CFA) to test the overall fit of the measurement model. Table.6 shows the common fit indices, recommended values and analytical results for measures of IM, F2F, and VE. According to Table.6, all the model-fit indices exceeded the respective common acceptance levels [36], indicating that the measures of IM, F2F, and VE exhibited a good fit with the data collected.

Table.5. Results of principal components analysis of four dimensions of preference scale for VE (N=419)

Item	*ES*	*UE*
4. Virtual environment is not proper for emotional sharing (R)	,802	
2. Virtual environment is not a proper atmosphere to express and transfer emotions (R)	,770	
1. Virtual environment is insensitive (R)	,761	
3. Virtual environment leads to dissociality (R)	,626	
5.Communications in virtual environment is not satisfying (R)	,611	
6. When I use MSN (icq, skype etc.) I use so many emoticons to express my feelings		,778
7. My friends sending message to me on MSN (icq, skype etc.) use so many emoticons to express their feelings		,773
8. I think emoticons on MSN (icq, skype etc.) help me express my feelings easily		,667
Variance Explained (%)	33,65	21,25
Cronbach's α (,603)	,766	,613

Table.6. The fit indices and analysis results for measures of IM, F2F, and VE

Fit indices	**Recommended value**	**Result**		
		IM	**F2F**	**VE**
χ2/df	<3.00	2.75	2.90	2.32
GFI (goodness of fit index)	>0.90	0.93	0.92	0.97
RMSEA (root mean square error of approximation)	<0.08	0.069	0.067	0.056
SRMR (standardized root mean square residual)	<0.08	0.051	0.047	0.058
NFI (normed fit index)	>0.90	0.94	0.95	.95
NNFI (non-normed fit index)	>0.90	0.96	0.96	0.96
CFI (comparative fit index)	>0.90	0.96	0.97	0.97

III.4.3.Correlation Between Scales' Dimensions

Zero-order bivariate correlations were calculated among all dimensions of the study scales and significant and non-significant correlations are presented in Table.7. Consistent with expectations, scales dimensions revealed strong positive correlation with each other. This result showed that all dimensions are positively related to each other even though the dimensions differentiated as separate factors.

Table.7. Means, standard deviations and correlations of constructs

	Mean	Std. Dev.	Age	1	2	3	4	5	6	7	8	9
Age	21,90	2,79										
	3,69	,79	,004									
2 Usage of emoticons	3,44	,79	-,088	-,074								
Instant Messaging (IM)												
3 Emotion express	2,22	,81	-,014	-,190**	,144*							
4 Social presence	2,86	,86	,061	-,227**	,242**	,525**						
5 Information richness	3,82	,97	,002	-,049	,152*	,217**	,394**					
Virtual Environment (VE)	3,09	,96	,075	-,142**	,199**	,431**	,525**	,466**				
1 Emotion sharing												
7 Emotion express	4,41	,66	,044	,111**	,086	-,315**	-,121*	,132*	-,010			
8 Social presence	4,32	,62	,017	,162**	,064	-,184**	-,273**	,052	-,082	,628**		
9 Information richness	3,64	,82	-,044	,092	,047	-,012	-,104*	-,267**	-,152*	,352**	,441**	
10 Usefulness	4,17	,76	,031	,171**	,056	-,162*	-,127*	,041	-,115*	,588**	,505**	,417**

* $p < .05$., ** $p < .01$.

Results, expressed in the Table.7, showed that age is not correlated with any variable in the study. However, "Emotion Sharing" dimension of virtual environment is negatively correlated with "social presence", "emotion express" and "usefulness" dimensions of IM and positively correlated with "social presence", "emotion express" and "usefulness" dimensions of F2F communication. "Usage of Emoticons" dimension of Virtual Environment is positively correlated with all dimensions of IM.

Correlation between scale dimensions revealed that "social presence" of IM is negatively correlated with all F2F dimensions. These results revealed that as preference of IM increases in terms of social presence, preferences for all dimensions of F2F communication decreases. IM "information richness" dimension is also negatively correlated with "information richness" dimension of F2F, but positively correlated with "emotion express" dimension of F2F. Similarly, as preference of IM increases in terms of "emotion express", preference of "social presence", "emotion express" and "usefulness" dimensions of F2F decreases subsequently. The last dimension of IM named "usefulness" is also negatively correlated with both "information richness" and "usefulness" dimension of F2F.

III.4.4.T-Test

In this section, the answer to the main question of this study is investigated. Independent samples t-test was conducted to see the gender differences regarding expressing emotions in virtual environment. The result of the t-test for virtual environment is presented in Table.8.

Table.8. Means, standard deviations, t-scores, and significance levels

	Mean	St.D.	t	df	p
Emotion Sharing			0,77	417	.462
Female	3,72	0,72			
Male	3,66	0,84			
Usage of Emoticons			1,97	417	.049
Female	3,52	0,74			
Male	3,37	0,82			

According to the results, there is not a significant difference between males and females in terms of "emotion sharing" dimension (p= 0,462) but results revealed a significant difference between males and females in terms of "usage of emoticons" (p=0,049). Therefore, our fourth hypothesis that there would be a significant difference between males and females for

emotion sharing in virtual environment was partly supported. Results show that female participants are closer to the idea that IM is an appropriate way to express emotions (*Emotion Sharing*: mean=3,72; sd=0,72; *Usage of Emoticons*: mean:3,52; sd=0,74).

In order to test the significant differences in preference of students between F2F and IM a paired samples t-test was performed at 95% confidence interval level. A t-test was conducted for all four dimensions (Social presence, information richness, emotion express and usefulness) separately. Table.9 shows the results of all paired samples t-test analysis results.

Table.9. Standard deviations, t-scores, and significance levels

	Mean	Std.Dev.	T	df	p
Social Presence			-25,02	418	.000
IM	2,86	0,86			
F2F	4,32	0,62			
Information Richness			2,60	418	.010
IM	3,82	0,97			
F2F	3,64	0,82			
Emotion Express			-37,73	418	.000
IM	2,22	0,81			
F2F	4,41	0,66			
Usefulness			-17,01	418	.000
IM	3,09	0,96			
F2F	4,17	0,76			

The first result revealed that there is a significant difference between IM and F2F scores in terms of "social presence". This result supports our fifth hypothesis that F2F communication will be preferred to IM in terms of "social presence". The second result also supported the first hypothesis of the study that stated IM would be preferred to F2F in terms of "information richness". Congruently with expectations, t-test result shows that participants preferred F2F communication in terms of "emotion expresses" significantly more than IM. The mean of "emotion express" dimension of F2F communication is significantly higher than the mean of "emotion express" dimension of IM that supported our third hypothesis; "participants will prefer F2F communication more than IM communication for "emotion express". The result of paired samples t-test is also significant in "usefulness" dimension. Our second hypothesis that stated *IM will be preferred more than F2F communication in terms of* "*usefulness*" is rejected.

III.5. Content Analysis

Content analysis was conducted for the data gathered from the fourth part of the questionnaire which consists of two open ended questions. The answers given to these questions were gathered in an excel table and evaluated in three main categories; emotion express, social presence and usefulness. Each main category has been classified into sub-categories for each question.

The first question was "I prefer F2F communication, mostly for…". 25 subcategories were classified under three headlines; 6 for emotion express, 11 for usefulness, 8 for social presence. According to the answers given to the question, students prefer F2F communication mainly since it enables to express emotions. Mostly used expressions for F2F communication indicate that it is a warm and right way to transfer feelings. Secondly, they prefer F2F communication, because of its usefulness. It enables efficient communication environment and prevents misunderstandings. Because of these characteristics, most of the students stressed that F2F communication is the best way to gather around special and important issues. Results show that students think important and complex issues should be discussed F2F. Finally, most of the students prefer F2F for communicating with existing friends, colleagues; and the rest (very few) prefer F2F for constructing new relationships.

The second question was "I prefer IM, mostly for…" 15 sub-categories were classified under three headlines; 5 for usefulness, 9 for social presence and 1 for emotion express. According to results given to the question, the reason why students prefer IM for socialization is it enables students to communicate with friends abroad and out of access, and also to hang out with existing friends. Another stressed reason to use IM is its usefulness. Mostly used expressions for IM usage are as follows; easy, cheap and best way to transfer knowledge. A few respondents consider IM as an enabler to display communicators' real feelings and ideas, because of its virtual environment.

Although same headlines named: usefulness, social presence and emotion express headlines were found for both questions, their contents are different. For instance for F2F, usefulness means preventing misunderstandings and solving problems; while usefulness for IM suggests cheapness and easiness. Also while social presence in F2F means communicating with existing friends; social presence in IM is associated with communicating with friends abroad and out of access. These results mean, preference of communicating F2F or via IM regarding these dimensions mostly depends on circumstances.

III.6. DISCUSSION

Results of factor analysis revealed the presence of four factors on communication media preference. These factors are social presence, information richness, emotion express and usefulness. In order to evaluate the emotion express dimension expressions like "allowing to convey emotions correctly" and "allowing to feel the emotions of others" are used. Also for social presence, information richness and usefulness dimensions expressions like "allowing better social interaction", "Allowing to communicate more information" and "useful tool for working" are used.

Results of T-Test analysis revealed that there was a significant difference between IM and F2F scores in terms of all dimensions. Our first hypothesis that stated IM would be preferred to F2F in terms of "information richness" was supported. This finding is opposite to the research of Daft and Lengel [6] and in accordance with Ijsselsteijn et al. [35]. Daft & Lengel [6] posited a hierarchy among communication media, with F2F communication modes being the richest and all other media being less rich. On the other hand Ijsselsteijn et al. [35] stated that F2F communication lacks opportunities offered by some telecommunication media such as sending and receiving files at once and simultaneously, saving the history of interactions, reviewing a message before sending, or changing the representation of self and others. Besides low cost and less task equivocality also may affect university students' preferences of IM versus F2F in terms of "information richness".

Our second hypothesis was not supported since the results of t-test indicate that our respondents mostly prefer F2F to IM in terms of "usefulness". This result was also supported in our content analysis. Students expressed that F2F enables efficient communication environment and prevents misunderstandings and it is the best way to gather around special and important issues. But for IM they used expressions like: "*easy, cheap and best way to transfer knowledge*". However in our scale we mostly focused on usefulness dimension in terms of developing networks, interacting with friends and being useful for working. Therefore this unexpected result may be due to the items in the scale that mostly focused on usefulness in terms of working environment. Kelley [16], Girard and Sullivan [17] and Xio et al. [18] stressed the increasing popularity of IM in university and working environments due to its perceived usefulness. But there was no research that compares the preferences between IM and F2F communication. So this result can provide more insight to this discussion.

The results supported our third hypothesis stating that participants preferred F2F communication in terms of "emotion express" significantly more than IM. This result is consistent with Kiesler [19] and Hiltz and Johnson [20] who supported the idea of "IM is not suitable for socio-emotional context because of its inefficiency to transfer dynamic social cues such as facial expressions or gestures". On the other hand, our findings are contrary to findings of Radford [24] and Derks et al [25] [29] who draw attention to the role of emoticon usage in IM in emotion expression.

Our fourth hypothesis was partly supported, since according to research findings there is no difference in preferences of communication in virtual environment between genders for "emotion sharing" dimension but a significant difference for "usage of emoticons". This finding is partly in accordance with, Lee's [22] findings which indicate there is relation between gender and usage of emoticons. However our result is contrary to Wolf's [21] findings which indicate that both female and male users are equally likely to use emoticons.

Our fifth hypothesis was also supported and the results showed that participants prefer F2F communication for "social presence". This result is consistent with Zack and McKenney [37] who state that the choice of a medium is based on the need for social presence during a particular task. Thus, university students might likely prefer IM when the complexity of the task is low. If the complexity of the task and the need for more social contact is high, then F2F might be a more appropriate medium of communication.

Additionally our content analyses also show that students prefer F2F because they find it as an appropriate way to express emotions and transfer feelings. They also indicate that it prevents misunderstandings and it is the way to deal with important and difficult issues. These findings are consistent with Daft and Lengel [6], Huang et al, [9] and Huang and Yen, [1]. They indicate that some issues are open to misunderstanding and IM can improve this. For example immediate feedback and number of cues such as expressions, gestures and tones are crucial factors in communication and they are lacking in IM. So these missing elements are supposed to cause misunderstanding. Therefore they suggest that to avoid misunderstanding and disorder, people will prefer to communicate F2F.

Also our content analysis shows that students prefer IM because it enables them to communicate with friends who are abroad and out of reach easily and cheaply. Fabri et al. [38] also indicates that IM enables people to communicate over a distance. So our findings support this suggestion and show that students mostly prefer to use IM reach and communicate with someone who is abroad and out of reach.

IV. CONCLUSION

In conclusion the findings of this study highlight the preferences of university students between IM and F2F communication. This research shows that in spite of increasing usage of IM, F2F communication is still accepted as being superior for “emotion express”, “usefulness” and “social presence” between Turkish university students. IM is only preferred in respect of “information richness”.

This study has meaningful implications in terms of communication media preferences, however it has some limitations. First of all, this study was conducted on a limited sample size and the sampling method was convenience sampling. Both the limitation about the sampling method and sample size may decrease the generalizability of the results. It could be enhanced to variety of departments from different universities. Besides, this study examined students preferences between IM and F2F communication in respect of different dimensions (information richness, ease of use/usefulness, emotion express, and social presence). However, there are still many other dimensions which would help to better understand the preference of IM versus F2F such as cultural differences, impact of profession codes and personality that have not been discussed in this paper.

For future research, there are many implications that can be followed up from this study. First, this study could be applied to different social contexts such as different cultures and corporations. Secondly, future research can focus on the linkage between usage of mimics and emoticons, and its effects on online communication media preference. In addition usability of emoticons for several task and age-groups might be explored. Thirdly, as technology grows new kinds of interactions emerge that may be called awareness systems. Specifically, broadcasting technologies like Twitter added more effective benefits to instant communication such as keeping up-to-date with other people’s lives and staying in touch. Thus, future research may focus on the parties using these awareness systems and the reasons behind their usage of these systems. Besides, rethinking the dimensions of richness related to information sharing for online communication could be recommended.

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Appendix A

Virtual Environment

5-Point scale (Ranging from "completely inadequate" to "very adequate").

1. Virtual environment is insensitive.

2. Virtual environment is not a proper atmosphere to express and transfer emotions.

3. Virtual environment leads to dissociality.

4. Virtual environment is not proper for emotional sharing.

5. Communications in virtual environment is not satisfying.

6. When I use MSN (icq, skype etc.) I use so many emoticons to express my feelings.

7. My friends sending message to me on MSN (icq, skype etc.) use so many emoticons to express their feelings.

8. I think emoticons on MSN (icq, skype etc.) help me express my feelings easily.

Communication Preferences

5-Point scale (Ranging from "completely inadequate" to "very adequate").

1. Ease of expressing feelings (Item deleted during scale purification)

2. More funny to communicate

3. Ease to communicate

4. Feeling closer to friends and/or team members

5. Quicken development of friendships

6. Allowing better social interaction

7. Allowing to communicate more information

8. Conveying a large amount of information faster

9. Ease of access to people/knowledge

10. Allowing to clarify ambiguous issues

11. Ease of resolving disagreements

12. Useful tool for working

13. Useful tool for developing networks

14. Useful tool for interacting with friends

15. Protecting privacy[2]

16. Allowing to convey emotions exactly

17. Allowing to convey emotions correctly

18. Allowing to feel the emotions of others

Open Ended Questions

1. I prefer F2F communication mostly for
2. I prefer IM mostly for