

Examining Communication Skills Of Pre-service Information Technology Teachers

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Abstract

The purpose of the present study was to determine the communication skills of preservice information technology (IT) teachers attending Computer Education and Instructional Technologies (CEIT) at Anadolu University and to examine their levels of communication skills with respect to various variables. In the study, the singular and correlational survey models were applied. The research sample included a total of 183 preservice IT teachers in the 2009-2010 academic year. As the data collection tool, a demographic information form and the communication skills inventory developed by Ersanlı and Balcı (1998). The findings obtained in the study revealed that the preservice IT teachers' levels of cognitive, emotional and behavioral communication skills did not change with respect to their gender or their parents' educational background. On the other hand, it was found out that the freshman students had higher levels of emotional communication skills than the senior students did.

Keywords: *Communication Skills, Effective Communication, Education Faculty Students.*

1. Introduction

Human beings are in constant communication with each other and with their environments during their lives. Since the periods when humans started living as social beings, communication has been the most important factor helping them live together (Yüksel, 2008). Communication is defined as a process in which a source transmits a message to a receiver via a channel (Demirel, 2006). According to another definition of communication, it is the process of transferring or transmitting information, thoughts and emotions verbally or non-verbally from one individual to another or from one group to another (Güçlü, 2011). Depending on these definitions, communication could be said to a process of the transfer of emotions and thoughts to the source through certain channels.

Individuals with effective communication skills can establish healthy relationships and cope more easily with problems and are more likely to be successful in their lives (Özerbaş, Bulut and Usta, 2007). Lack of communication skills is likely to lead to failure in transferring emotions and thoughts correctly. In environments lacking well-established communication, individuals can not develop healthy relationships, which then cause them to feel dissatisfaction (Cüceloğlu, 2012).

The educational setting is one of the environments that especially require individuals with effective communication skills. For healthy education, there should be effective communication established among the students, the teacher and the administrators (Dilekman, Başçı & Bektaş, 2008). The

educational process is, in general terms, a communication process (Pehlivan, 2005). Ineffective communication or any disruption in the communication process is likely to hinder healthy education. In one study, Bozkurt (2006) reported that such practices as exercising a firm hand for students in a school environment and awarding students who adopt the authority of the teacher and obey the rules could bring about communication problems.

The education process is directly influenced by effective development of communication. Establishing effective communication in a class environment depends on the teacher's ability to teach a subject effectively and to establish healthy communication with the students (Anthony et al., 2008; Kyriacou & Kunc, 2007). Communication between the teacher and the student influences learning directly and indirectly (Spilt, Koomen & Thijs, 2011; Hamre, Pianta, Downer & Mashburn, 2008). Ergin and Birol (2000) stated that learning refers to creating a permanent behavioral change at the end of a communication procedure and thus is a product of good communication. The researchers also reported that in order to establish effective communication in the educational process, teachers are supposed to have a sense of democracy and thus to create a democratic atmosphere in class and are also expected to ensure effective participation of all parties in the educational environment.

In the educational environment, the basic determinant of successful communication process is generally the teacher. In the education process, the teacher is supposed to have students gain the target behavior predetermined in the educational curriculum (Ergin & Birol, 2000). The reason is that it is the teacher's responsibility to initiate communication, to give them the necessary information and to organize the educational environment. Thus, in order for the teachers to establish effective communication, they are supposed to have the necessary field knowledge and the skills envisaged to exist in the source in the communication process (Gökdağ, 2008). In other words, the teacher's effective communication skill is one of the most important variables for learning to occur.

In order for qualified teachers to establish effective communication, in the first place, they are to have good command of their own fields. Put it another way, teachers are supposed to have the necessary knowledge and skills regarding the field subjects and to apply the appropriate methods and techniques related to these subjects (Darling-Hammond & Baratz-Snowden, 2005). Besides all these, for effective communication, teachers should be able to express their emotions and thoughts and show empathy.

In addition, teachers will be able to establish closer relationships and more effective communication with their students when they know their students better and take them seriously. Teachers should have unprejudiced and understanding attitudes towards their students. Thanks to such attitudes of their teachers, students not only think their thoughts are accepted and but also develop their self-expression skills (Edwards & Watts, 2010). Roorda, Koomen, Spilt, and Oort, (2011) reported that students feel themselves closer to teachers who know them well. In addition, according to Güçlü (2011), there is a positive relationship of teacher-student communication with students' interest in lessons and with their habit of studying.

In order for teachers to develop healthy communication in the classroom, they are supposed to be open to developments and to renovate their knowledge and skills constantly (Beycioğlu & Aslan, 2010). A qualified teacher is one who is ambitious and open to changes and developments and who exhibit democratic behavior and accept positive feedback from others (Good & Brophy, 2003). Gürşimşek, Vural and Demirsöz (2008) state that teachers with effective communication skills are those who can feature their teacher-identity by making positive impression in the education process and by establishing effective communication with students. In this respect, determining teacher

candidates' communication skills and the factors that influence these skills is considered important for developing their communication skills.

It is now a must after graduation for preservice information technology (IT) teachers from the department of Computer Education and Instructional Technologies (CEIT) not only to pioneer in technology use but also to have effective communication skills required by the profession of teaching. When related studies in literature are examined, it is seen that most of them were carried out on the profession of teaching. In this respect, the present study aimed at examining the communication skills of preservice IT teachers who will be technology pioneers in future and tried to reveal the differences in their communication skills with respect to the students' demographic backgrounds. The results of the present study are thought to contribute to other studies in the field and to help solve the communication problems.

The purpose of the present study was to determine the preservice IT teachers' levels of communication skills attending the department of Computer Education and Instructional Technologies (CEIT) at Anadolu University and to examine their levels of communication skills with respect to certain variables.

Depending on this purpose, the following research questions were directed:

1. What are the levels of the cognitive, emotional and behavioral communication skills of the preservice IT teachers attending the department of Computer Education and Instructional Technologies (CEIT) at Anadolu University?
2. Do the levels of the cognitive, emotional and behavioral communication skills of the preservice IT teachers attending the department of Computer Education and Instructional Technologies (CEIT) differ with respect to
 - a. their gender
 - b. their class-grades
 - c. and their parents' educational backgrounds?

2. Methodology

2.1. Research model

The study was conducted with the singular and correlational survey models, which are among general survey models. The survey method is a research model used to respond to questions regarding the current situation with the help of gathering related information or to test the hypotheses (Gay, Mills & Airasian, 2006). Singular survey models are applied to determine the constitution of variables (Karasar, 2012). On the other hand, correlational survey models are those measuring the degree of a relationship between two or more measurable variables (Gay, Mills & Airasian, 2006). In the present study, the singular survey model was applied to determine the communication levels of the students attending the department of CEIT, and the relational survey model was applied to measure the differences in their levels of communication skills with respect to certain variables.

2.2. Participants

The present study was carried out with a total of 183 preservice IT teachers (57 of whom were freshmen; 37 of whom were Sophomores; 38 of whom were Juniors; and 51 of whom were seniors) attending the department of Computer Education and Instructional Technologies (CEIT) at the Education Faculty of Anadolu University in the 2009-2010 academic year.

The participating students' demographic backgrounds are presented in Table 1 below.

Table 1. Demographic backgrounds of the students participating in the study

		N	%	
Gender	Male	120	65,6	
	Female	63	34,4	
	Total	183	100	
Class-grades	Freshmen	57	31,1	
	Sophomores	37	20,2	
	Juniors	38	20,8	
	Seniors	51	27,9	
	Total	183	100	
Father's background	educational	Illiterate	14	7,7
		Elementary school	74	40,4
		Secondary School	61	33,3
		Graduate or post-graduate	34	18,6
		Total	183	100
Mother's background	educational	Illiterate	35	19,1
		Elementary School	98	53,6
		Secondary School	39	21,3
		Graduate or post-graduate	11	6,0
		Total	183	100

Of all the students attending the department of Computer Education and Instructional Technologies (CEIT), 65.6% of them were male, and 34,4% of them were female. When their parents' educational backgrounds are examined, it is seen that their parents generally had either elementary school degrees or secondary school degrees.

2.3. Instrument and procedures

As the data collection tool, the demographic information form developed by the researchers and the communication skills inventory developed by Eranlı and Balcı (1998) were used. Before the application of the communication skills inventory, Seher Balcı, one of the researchers developing the scale in question, was asked for her permission. The inventory was developed to determine individuals' levels of communication skills used in interpersonal relationships. This initial version of the scale, whose validity and reliability studies were conducted, included 70 items. The inventory was then applied to a sample of 500 university students, and as a result of the factor analysis conducted, the number of the items in the inventory was decreased to 45 (Eranlı & Balcı, 1998).

As a result of the reliability study carried out with the test-retest method, the reliability coefficient was found .68, and as a result of the study conducted with the split-half method, the reliability coefficient was calculated as .64. In addition, the Cronbach alpha coefficient calculated to determine the internal consistency of the scale was found .72. The validity study conducted revealed that the validity coefficient was .70 (Ersanlı & Balcı, 1998).

The inventory finalized by Ersanlı and Balcı (1998) is made up of Likert-type 45 questions. The inventory measures cognitive, emotional and behavioral communication skills. For each of these three dimensions, the scale includes 15 items. The items regarding each dimension are as follows:

Cognitive Skills: Item numbers 1,3,6,12,15,17,18,20,24,28,30,33,37,43 and 45.

Emotional Skills: Item numbers 5,9,11,26,27,29,31,34,35,36,38,39,40,42 and 44.

Behavioral Skills: Item numbers 2,4,7,8,10,13,14,16,19,21,22,23,25,32 and 41.

The items found in the inventory are scored as 5 for "always", 4 for "generally", 3 for "sometimes", 2 for "rarely" and 1 for "never". The choice with the highest rating in the inventory is "always" rated as 5, the one with the lowest rating is "never" rated as 1. The highest score to be produced by the inventory is 225, and the lowest is 45.

The demographic information form included items that helped determine the students' class-grades, their gender and their parents' educational backgrounds.

2.4. Data analysis

Following the arrangement of the data collected in the study, descriptive statistics was used to determine the students' mean scores regarding the sub-dimensions of communication skills.

While examining the data collected via the communication skills inventory, the standard ranges were determined with the formula of $(n-1 / n) * \text{number of items}$ ($n=5$) parallel to the means to reveal the students' levels of communication skills.

The means of the total scores (\bar{X}) found

between $15.0 \leq \bar{X} < 27.0$ meant that the students "never" did the statement in the related item,

between $27.0 \leq \bar{X} < 39.0$ meant they "rarely" did what was stated in the related item,

between $39.0 \leq \bar{X} < 51.0$ meant they "sometimes" did what was stated in the related item,

between $51.0 \leq \bar{X} < 63.0$, meant they "generally" did what was stated in the related item and

between $63.0 \leq \bar{X} < 75.0$, meant they "always" did what was stated in the related item.

Prior to analysis, while examining the differences in students' levels of communication skills with respect to certain variables, the Kolmogorov-Smirnov normality test was conducted to determine whether the data met the parametric test conditions. According to the normality test results, the parametric test conditions were met with respect to the general communication skills [$D(183) = 1.013$; $p > 0.05$] and to the sub-dimensions of cognitive skills [$D(183) = 1.104$; $p > 0.05$], emotional skills [$D(183) = 1.265$; $p > 0.05$] and behavioral skills [$D(183) = 1.100$; $p > 0.05$]. In the study, the independent samples t-test, which is among parametric tests, was applied to determine whether there was a difference between the students' communication skills in terms of their gender, and Analysis of Variance (ANOVA) was conducted to determine whether the students' scores regarding their

communication skills differed with respect to their class-grades and their parents' educational backgrounds. In order to reveal which groups caused the difference, the Tukey HSD test was applied.

3. Findings

This section presents the findings obtained as a result of the analyses of the data collected in line with research sub-purposes. In addition, the related interpretations made depending on these findings are also included in this section.

Examining preservice IT teachers' levels of communication skills

The students' scores regarding the sub-dimensions of communication skills are presented in Table 2.

Table 2. Students' mean scores regarding the sub-dimensions of communication skills.

	Freshmen		Sophomores		Juniors		Seniors	
	\bar{x}	Sd	\bar{x}	Sd	\bar{x}	Sd	\bar{x}	Sd
Cognitive Skills	34,81	4,930	35,11	4,618	35,89	5,486	36,16	5,368
Emotional Skills	35,54	5,590	36,00	5,196	36,71	6,294	38,65	5,993
Behavioral Skills	33,07	5,666	32,38	3,766	33,03	5,005	34,47	5,364

When Table 2 is examined, it is seen that the participating students from four different class-grades "rarely" used their cognitive, emotional and behavioral communication skills. In other words, the students from four different class-grades could not be said to have good general communication skills. Depending on these findings, it could be stated that the students' communication skills were not sufficiently developed.

Examining the differences regarding the preservice IT teachers' communication skills with respect to certain variables

Table 3 presents the results of the independent samples t-test conducted to see whether there was a difference between the participating students' scores regarding their communication skills with respect to their gender.

Table 3. Independent t-test results regarding the students' scores of their communication skills with respect to their gender

	Gender	N	\bar{x}	SD	t	df	p
Cognitive	Female	63	35,00	4,494	-,902	181	,368
	Male	120	35,72	5,400			
Emotional	Female	63	36,68	5,294	-,101	181	,920
	Male	120	36,78	6,172			
Behavioral	Female	63	32,73	5,274	-1,112	181	,267
	Male	120	33,62	5,041			

Total	Female	63	104,41	13,179	-,790	181	,431
	Male	120	106,11	14,103			

*p>0.05

When Table 3 is examined, it is seen that there was no significant difference between the students' scores regarding their communication skills with respect to their gender ($p>0.05$). In another saying, the students' communication skills did not differ depending on their gender.

Table 4 presents the results of the analysis of variance conducted on the students' scores regarding their communication skills with respect to their class-grades.

Table 4. Results of Analysis of Variance Regarding Students' Scores of Communication Skills with Respect to Their Class-Grades

	Source	SS	df	MS	F	p
Cognitive	Between groups	60,816	3	20,272	,775	,509
	Within groups	4682,769	179	26,161		
	Total	4743,585	182			
Emotional	Between groups	287,326	3	95,775	2,865	,038*
	Within groups	5983,603	179	33,428		
	Total	6270,929	182			
Behavioral	Between groups	107,144	3	35,715	1,368	,254
	Within groups	4674,102	179	26,112		
	Total	4781,246	182			
Total	Between groups	1123,502	3	374,501	2,005	,115
	Within groups	33434,137	179	186,783		
	Total	34557,639	182	20,272		

*p<0.05

When Table 4 was examined, no significant difference was found between the students' scores of communication skills with respect to their class-grades regarding the cognitive and behavioral sub-dimensions. In other words, the students' cognitive and emotional communication skills did not change in terms of their class-grades. On the other hand, there was a significant difference with respect to the emotional dimension [$F(3-179)=95,775$, $p<0.05$]. Table 5 presents the results of the Tukey HSD test conducted to determine between which groups the difference occurred.

Table 5. Tukey HSD Test Results Regarding the Students' Scores of Communication Skills with Respect to Their Class-Grades

	Groups	Mean Difference	Std. Error	p
Emotional	Freshmen- Sophomores	-,456	1,221	,982
	Freshmen - Juniors	-1,167	1,211	,770
	Freshmen - Seniors	-3,103	1,114	,030*

Sophomores - Juniors	-,711	1,335	,951
Sophomores	-2,647	1,249	,151
Seniors			
Juniors - Seniors	-1,937	1,239	,402

*p<0.05

When Table 5 is examined, it is seen that the significant difference occurred between the first class-grade and the fourth class-grade. Therefore, it was revealed that the first class-grade students had higher attitude scores regarding the dimension of emotional communication skills than the fourth class-grade students did. Put it another way, the freshman students had more developed emotional communication skills than the senior students did.

Table 6 presents the results of one way analysis of variance conducted to determine whether there was a difference between the students' scores of communication skills with respect to their fathers' educational backgrounds.

Table 6. Results of Analysis of Variance Regarding the Students' Scores of Communication Skills with Respect to Their Fathers' Educational Backgrounds

	Source	SS	df	MS	F	p
Cognitive	Between Groups	38,351	3	12,784	,486	,692
	Within Groups	4705,233	179	26,286		
	Total	4743,585	182			
Emotional	Between Groups	140,667	3	46,889	1,369	,254
	Within Groups	6130,262	179	34,247		
	Total	6270,929	182			
Behavioral	Between Groups	91,860	3	30,620	1,169	,323
	Within Groups	4689,385	179	26,198		
	Total	4781,246	182			
Total	Between Groups	431,571	3	143,857	,755	,521
	Within Groups	34126,069	179	190,648		
	Total	34557,639	182			

*p>0.05

When Table 6 was examined, no statistically significant difference was found between the students' scores of communication skills with respect to their fathers' educational backgrounds (p>0.05). In other words, the students' communication skills did not differ depending on their fathers' educational backgrounds.

The results of one way analysis of variance conducted to see whether there was a difference between the participating students' scores of communication skills with respect to their mothers' educational backgrounds are presented in Table 7 below.

Table 7. Results of Analysis of Variance Regarding the Students' Scores of Communication Skills with Respect to Their Mothers' Educational Backgrounds

	Source	SS	df	MS	F	p
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Cognitive	Between Groups	61,677	3	20,559	,786	,503
	Within Groups	4681,908	179	26,156		
	Total	4743,585	182			
Emotional	Between Groups	59,227	3	19,742	,569	,636
	Within Groups	6211,702	179	34,702		
	Total	6270,929	182			
Behavioral	Between Groups	117,889	3	39,296	1,508	,214
	Within Groups	4663,357	179	26,052		
	Total	4781,246	182			
Total	Between Groups	508,074	3	169,358	,890	,447
	Within Groups	34049,56	179	190,221		
	Total	34557,63	182			
		5				9

*p>0.05

When Table 7 is examined, it is seen that there was no statistically significant difference between the students' scores of communication skills with respect to their mothers' educational backgrounds ($p>0.05$). In another saying, the students' communication skills did not differ depending on their mothers' educational backgrounds.

4. Conclusions and Recommendations

In this study carried out with 183 preservice IT teachers at Anadolu University in the academic year of 2009-2010 for the purpose of determining their communication skills, it was found out that the students had low levels of communication skills. This situation could have occurred for individual, institutional or social reasons. The students' communication skills could have been influenced by such factors as the family environment or the social structure as well as by the fact that the faculty members did not give enough importance to activities to develop students' communication skills and that the students did not participate much enough in social activities to develop their communication skills.

As a result of the present study, it was found out that there was no significant difference between the students' communication skills with respect to their gender. The fact that no difference was found between the preservice IT teachers' communication skills with respect to their gender could have been a result of their similar communication skills as they took the same professional training. Dilekmen, Başçı and Bektaş (2008), in their study, concluded that education faculty students' communication skills do not differ depending on their gender. Similarly, Bulut (2004) reported that there was no difference between elementary school teacher candidates' communication skills with respect to their gender. These findings are consistent with those obtained in the present study. In addition, in some other studies, it was seen that female participants were, even if just a bit, more successful than male participants in terms of communication skills (Korkut, 2005; Toy, 2007; Özerbaş, Bulut & Usta, 2007).

Another finding obtained in the present study was that the students' class-grades caused a significant difference in their communication skills with respect to the emotional dimension. It was found out that the freshman students had high levels of emotional communication skills than the senior students did. This situation could have caused the students to demonstrate more emotional behavior because the students coming from other cities were away from their families and thus because they could not adapt themselves to the new environment. However, in similar studies reported in related literature,

different findings were obtained. In one study, Pehlivan (2005) found out that the higher the class-grades of the students attending the department of Elementary School Teaching were, the higher the students' levels of perception of communication skills were. On the other hand, Dilekmen, Başçı and Bektaş (2008), in their study, found no significant difference in education faculty students' communication skills with respect to their class-grades.

The present study also investigated whether the participating students' communication skills differed with respect to their parents' educational backgrounds. Although Ergun (1994) and Erjem (2000) reported that the father's profession and his educational background are among important variables that determine one's profession, in the present study, no difference was found in the participating students' communication skills with respect to this variable. Depending on this situation, it could be stated that the parents' educational backgrounds do not influence students' communication skills. Similarly, parents mostly have elementary school degrees or secondary school degrees.

Depending on the results of the present study, first, symposiums and social activities for developing preservice IT teachers' communication skills should be organized at universities as these students have low levels of communication skills. In addition, libraries that students benefit from should be equipped with a sufficient number of sources. Considering the fact that students' communication skills do not increase in parallel to their class-grades, the current educational environment should be revised and updated.

Besides the students attending the department of CEIT at Anadolu University, replication of the present study with a quantitative survey model to determine the communication skills of preservice IT teachers attending other universities throughout Turkey will help support the results of the present study.

Applied qualitative studies to be conducted in various courses for improving the communication skills of students attending the department of CEIT will contribute to the development of communications.

The present study conducted with preservice IT teachers attending the department of CEIT in terms of different variables will help determine the other factors influencing communication.

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