The Determınation of Secondary School Students' Metaphors about the Internet Concept

Aynur Kolburan Geçer[1] , Arzu Deveci Topal[2]

[1] *Kocaeli University - Faculty of Education , Department of Computer Education and Instructional Technology , Umuttepe Yerleşkesi 41380 Kocaeli- Turkey*
[2] *Kocaeli University, Department of Informatics, Umuttepe Yerleşkesi-41380 ,Kocaeli-Turkey*

Abstract - The aim of this research is to assess the elementary school second grade students' metaphors that they develop. The results of the research indicate that the students have developed positive images about the internet. Internet was expressed as a source of application by the primary school students and they likened the internet to an object (abascus, bulb, usb, book etc.), to a person (clever person, father-mother, scholar, philosopher etc), to a source of information (clever library, encylopedia, tree of information, the salad of information etc), to an animal (to a donkey, to a creature that knows everything, the ants etc.), to a machine (machine of information) or to an ocean.

Keyword: **Primary School Second Grade Students, Metaphors.**

1. Introductıon

In our era, the increase in rate of change in information and technology transforms the social life and bring forward some new concepts. Such concepts as information society, information technology, communication technology and informatics technology begin to be used rather frequently in our life. There is a bi-directional and positive relationship between information and technology. As the information increases technology improves, as the technology improves information increases. Thanks to the bi-directional loop between the technology and information, all the societies pursuing the information are experiencing fast change and development. Today, societies expect the individuals they educate to be in command of information and communication technology and to use it effectively in their life. The major change in these technologies affects the education environment and forces it to change. The individuals who are within this environment are required to develop skill and attitude as to the information they get. In order to make the individuals acquire these attitude changes, it becomes a necessity to introduce the information and communication technologies, use it in the education environment and make the individuals get a positive attitude as well for preparing him/her to the contemporary life. On the other hand, in today's contemporary education perception they are trying to make the students acquire the skill of 'learning to learn'. The students are asked to learn and configure the information they need on their own effort. Internet which can be called as a huge library is one of the sources that students use to reach the information they need. Some advantages such as limitless communication that internet provides to its users in daily life, the ease of the information access, exchange of information for the educational institutions, entry, taking notes, and updating the information have made the internet an essential element in educational institutions [6]. Internet, which makes the students acquire a whole-life learning skills and provide them with the information they need, enables the students to gain responsibility for accessing the information as well [1]. The students need to get some qualifications related to information and communication technologies in order to gain these responsibilities. One of these qualifications is using the Internet. The competence of using the internet consists of such basic information as sending e-mail or receiving it, attaching files to the e-mail, searching for information, recognizing the addresses, using the web search engines and chatting and subscribing to the news list [9]. Use of the internet becomes widespread in our country as well as throughout the world. As of 2010, use of the internet reaches %37,6 [10]. In our country where use of the internet is gradually increasing, both the environment they are within (school, family, internet cafes) and the facilities it offers have a great importance for the students to get the competency they need. Determination of the competence level of the elementary students about internet, which is the basic source of information in whole-of –life learning and effective in daily life can form data for the ways of helping them regarding the issue.

Kocaeli Metropolitan Municipality, which is aware of the benefits that becoming an information society will bring, has been distributing netbooks to the sixth grade students in Kocaeli formal primary schools every year since 2009 under the name of 'A Computer to Every Student' campaign. Kocaeli Metropolitan Municipality, which wants to contribute to raising students who have a high computer and internet literacy, has distributed over 80.000

netbooks since 2011. The Municipality intends to have distributed netbooks to 130.000 students after the five-year Project. It is thought that this project will be beneficial in terms of providing equality of opportunity in education and introducing the internet and computer to the students who have middle and low socio-economical status. The project which is ongoing for three years is needed in order to find out its effect on students' internet usage competency and the aims of their internet usage. Moreover; the students in the primary school second level are asked to develop metaphors in order to understand their perception about the internet concept. Metaphor is to form a common attitude which can be seen in all languages and to make comparisons in order to strenghten the expressions. This comparison can either be direct or the object to be expressed can be based on another object and the similarity between them [2]. Metaphor is a strong mental tool which helps an individual to understand the abstract, complex and theoretical facts and to express them. As Shuell [7] emphasized, 'If a picture costs 1000 words, a metaphor costs 1000 pictures.' Because a picture only presents a static image, but a metaphor presents a mental framework in order to think on a fact. This study is required to determine the metaphors students develop about the internet within the scope of 'A Computer to Every Student' Project.

1.1. The Aim of this Research

The aim of this research is to determine the primary school second grade students' metaphors they develop about the internet. For this purpose, answers are inquired to the following questions;

- What are the metaphors the students develop for the internet concept?
- Under which conceptual categories can the determined metaphors be collected?

2. Method

2.1. The model of the research

A descriptive survey model was used in this research to determine the students' level of internet competency and suggest the metaphors they develop about the concept. This model tries to describe what the events, objects, entities, institutions, groups and some other areas are [4].

2.2. Population and Sample

The participants of this research, which will be carried out in survey model, are composed of sixth-seventh-eighth grade secondary school students from 61 primary schools in the central province of Kocaeli in the second semester of 2011-2012. However the sample is composed of the students chosen through the 'proportional cluster sampling' from the central province. In the Proportional Cluster Sampling process, the system in itself first branches into sub-systems that are more similar to each other. Each sub-system has the same chance for involving in the system. The Proportional Cluster Sampling carried out by this way is accepted to form a more representational system [5]. For Proportional Cluster Sampling, the system was first divided into three sub-systems as 'upper(9 primary school), moderate (26 primary school) and the lower part (26 primary school according to the 'socio-economical level' variance which is considered to have important effects on the research results. Then 7 (%10) primary schools from each sub system were chosen in such a way that they reflected the sub-system's rate in the whole. To conduct this process three schools from the lower socio-economic level, three from the moderate socio-economic level and one from the upper socio-economic level were involved in the scope of the study. 524 students who are studying in these schools attended this research. But, as some students' questionnaires were found to have deficient demographic information, only 513 of them were evaluated.

2.3. Data Collection Tool

The survey's data, are gathered the the students' views on the 'internet' concept were obtained through the metaphors. In order to carry out this activity , a sheet on which the following was written "Internet resembles to …….;because…" was given to the students. Then the students were clarified about the metaphors. It was particularly highlighted to the students that they should compare the internet to something and explain the reasons for this. The students were given approximately 20 minutes in order to produce metaphors. This time is considered enough as it is intented to benefit from the first metaphors coming to students' mind. The relationship between the subject and source of the metaphor was tried to be determined by the word of 'resemble' . The students were asked to continue the sentences with ' because'. The conjuction 'Because' was used to explain the meaning and the reason of the metaphor.

2.4. The Analysis of the Data

The students were asked to write a metaphor explaining their emotions about the internet concept. But %32 of the students didn't specify a metaphor

about this concept. The remaining 481 students' metaphor analysis and interpretation process was performed at following stages: 1) Naming stage 2) Classification 3) Re-organizing and compiling stage 4) Developing category stage 5) Transferring the info to the computer for quantitative data analysis [8]. First Stage - Naming: The metaphors the students created were depicted as concepts (for instance, 'ödevmatik,' 'bilgimatik', 'sun', 'spider web' etc.) . The metaphors that the students noted down were transferred to the Excel programme along with the other participants' information. Then in another column the metaphors were arrayed from A to Z. Second Stage - Classification: In this stage every metaphor was subdivided in parts and the similarities and the commonalities between metaphors were anlayzed through using techniques of 'the analysis of the metaphor' and 'the analysis of the content' [11]. Thus, the metaphors the students created were analyzed and the sorting stage was conducted depending on the following four criteria: a) The papers which include only definition or which don't have any metaphor source b) The papers which don't include any reasons for the metaphor though a metaphor is mentioned. c) The metaphors including characteristics for more than one category. d) 'Illogical' metaphors or the metaphors which don' t have any contribution to the concept of computer ownership [8]. Based on these criterias, 15 forms out of 481 were eliminated because of the metaphors that don't have any contribution to the comprehension of internet concept. As a result; the interpretations and the evaluations were done over 466 forms. After these procedures the metaphors were arrayed from A to Z and revised. The personal information about the producer of the metaphor was coded in bracket just after the metaphor. These are the equivalents of the codes: (1) Considering the socio-economic level of the schools' environment; 'D' = low level schools, 'O' = moderate level school and 'Y' = the upper level school. (2) 6,7,8 numbers represent the the level of the students' class. (3) The 'G' and the 'B' were used to express the sexes of the students(G: girl B:boy). Finally, the participants that have the same socio-economic level, class level and the sex were distinguished by adding a number just after the letter that represents the sex. Third Stage: Reorganizing and Compiling : After the invalid metaphors had been excluded, 138 metaphors were obtained. Then a new list was prepared with the valid metaphors. Fourth stage: Developing Category: In this stage, the metaphors created by the students were examined in terms of their common characteristics related to internet concept. A metaphor example was chosen out of the students' expressions. Thus; a sample metaphor list was formed of each 138 metaphor by compiling the students'metaphor images that were supposed to have the best representation. During this process, the sample metaphor list was used as a base and how the metaphor image conceptualizes the concept of internet was examined. For this aim, the metaphor images that were produced by the students were analyzed in terms of (1) the topic of the metaphor, (2) the source of metaphor and (3) and the relationship between the topic of the metaphor and its source. Then, each metaphor image was associated with a specific theme related to the perspective possessed about the concept of the internet and nine different conceptual categories were formed.

In order to provide the reliability of this research, the metaphor images which were suggested under nine conceptual categories raised in the research were given to an expert in order to confirm that they represent a conceptual category. For this reason, two lists that were prepared by a researcher were given to a faculty member : (a) a list of the 138 sample metaphor images in alphabetical order and (b) A list which includes the names and the characteristics of nine conceptual categories. The faculty member was asked to match up the metaphor images in the first list and the nine conceptual categories in the second list (by not excluding any metaphor images). Then, the matching that the faculty member did was compared with the researcher's own categories. In these comparisons, consensus and the discord numbers were ascertained and the reliability of the research was calculated by using the formula of Miles and Huberman (1994) (reliability=consensus/[consensus+discord] * 100). If the reliability calculations goes over .70, the research is accepted to be reliable. The compliance between the assessments of the faculty member and the researcher was found alpha= 0.93. This value showed that the desired reliability is secured. Within the scope of the reliability study, the faculty member matched up the nine metaphor differently from the researcher (i.e box of information, bazaar of information, machine of information, to the philosopher, to a brain, to the world's brain, to a multipurpose good, to eating junk food and to eating). In this situation, the reliability was calculated as : Reliability =138/129+9=0.93.

Transferring the data to the SPSS packet programme for the quantitative analysis: After the completing the description of 138 metaphors and the enhancement of the nine dominant group, all the data was transferred to the SPSS statistics programme. Following this procedure, the number of the students (f) representing each metaphor and each category and their rate(%) were calculated according to the level of the class.

3. Fındıngs and Conclusıon

In this section the data was analyzed and supported with the related results of the research in accordance with the survey's aims and sub-aims.

The Findings Related to the Demographic Features of the Students

The findings related to the demographic features of the students attending the survey can be seen on the Table 1.

When the above table is analyzed, it is understood that %54.8 of the participants are girls. When examinig class level, %38.0 is made up of the sixth grade, %35.3 is the seventh grade and %26.7 is the eighth grade students. The distribution according to socio-economic level of the environment that the schools are in is as follows : %46.4 low, %37.8 mid,%15.8 the upper.

Demographic features		
Gender	**N**	**%**
Ğirl	281	54.8
Boy	232	45.2
Class	**N**	**%**
6	195	38.0
7	181	35.3
8	137	26.7
The socio-economic level	**N**	**%**
Low	238	46.4
Mid	194	37.8
High	81	15.8

Table 1:Findings Related to the Demographic Features of the Students

What are the metaphors the students develop for the "internet" concept?

Table 2 indicates the number and percentage of the students representing each metaphor in alphabetical order.

		The number of the students representing the metaphor				The number of the students representing the metaphor	
Code of metaphor	The name of metaphor	f	%	Code of metaphor	The name of metaphor	f	%
1	To the Abacus	3	0.64	70	To our vital need	1	0.21
2	To eating junk food	1	0.21	71	To the box of entertainment	2	0.42
3	To the page which is opened	1	0.21	72	To a donkey	2	0.42
4	To a clever person	4	0.85	73	To a window opened for entertainment	4	0.85
5	To a clever library	8	1.71	74	To sightseeing a home	1	0.21
6	To the shopping center	1	0.21	75	To a pet	3	0.85
7	To the alcoholic drinks	8	1.71	76	To the door of my home	4	0.85
8	To the mother /father	1	0.21	77	To the most important discovery	1	0.21
9	To the encylopedia	7	1.50	78	To my palm	6	1.28
10	To the magical lamp of Alaaddin	1	0.21	79	To a philosopher	9	1.93

11	To the rescue and search mission	2	0.42	80	To the rainbow	3	0.64
12	To the bulb	3	0.42	81	To a mysterious world	1	0.21
13	To the game played with a friend	3	0.21	82	To the reason of the eye defectives	1	0.21
14	To my friend	9	1.93	83	To the Sun	5	1.07
15	To be together with my friends	5	1.07	84	To make the daily Works	1	0.21
16	To the things that made addiction	1	0.21	85	To the door opened for life	5	1.07
17	To a house	2	0.42	86	To an opportunity faciliating the life	2	0.42
18	To the bird of letter	4	0.85	87	To a person in the prison	9	1.93
19	To a monster	7	1.50	88	To a creature who knows everything	2	0.42
20	To the exchange of information	1	0.21	89	To an eternal energy	1	0.21
21	To the passion of computer	1	0.21	90	To coming of the light to a dark home	1	0.21
22	To the tree of information	3	0.64	91	To fill up an empty glass	1	0.21
23	To the world of information	2	0.42	92	To the ants	4	0.85
24	To the salad of information	6	1.28	93	To the rope	1	0.21
25	To the box of information	29	6.22	94	To the world becoming like a small village	3	0.64
26	To the bazaar of information	1	0.21	95	To the window open for the World	2	0.42
27	To the machine of information	2	0.42	96	To the chocolate cake	1	0.21
28	To a scholar	3	0.64	97	To the cat	2	0.42
29	To a plane/jet	10	2.14	98	To my own fantasy world	1	0.21
30	To a center of inquiry	5	1.07	99	To my treadmill	1	0.21
31	To riding a bike	5	1.07	100	To a bad habit	3	0.64
32	To have twins	7	1.50	101	To the sphere	2	0.42
33	To a big spider web	9	1.93	102	To the amusement park	1	0.21
34	To a butterfly	5	1.07	103	To the motorbike	1	0.21
35	To a city	4	0.85	104	To the fashion house	1	0.21
36	To a discoverer	1	0.21	105	To a cheerful life	1	0.21
37	To a packet including information, game and char	1	0.21	106	To the school	2	0.42
38	To a dream	9	1.93	107	To my game cards	1	0.21
39	To a scientist	5	1.07	108	To my toy	1	0.21
40	To a magnet	1	0.21	109	To console of game	1	0.21
41	To a servant	4	0.85	110	To the game	6	1.28
42	To a king	2	0.42	111	To the teachers at school	12	2.57
43	To a brain	3	0.64	112	To Oburix	2	0.42
44	To an inventor	6	1.28	113	To the game house	1	0.21
45	To an ocean	2	0.42	114	To freedom	7	2.36
46	To the millions of people roaming in a cable	3	0.64	115	To ödevmatik and bilgimatik	2	0.42
47	To a book	14	3.00	116	To a comfortable Tv seat	2	0.42

48	To a key	2	0.42	117	To imaginary universe	1	0.21
49	To life	7	1.50	118	To the chair	1	0.21
50	To cigarette	2	0.42	119	To a magical mirror	1	0.21
51	To a big circle	2	0.42	120	To a hollow that has no end	2	0.42
52	To watch all the World	2	0.42	121	To do sports	1	0.21
53	To spend free time	1	0.21	122	To surf	2	0.42
54	To an empty vehicle	1	0.21	123	To the stress ball	2	2.14
55	To the streets	6	1.28	124	To the magical sphere	7	1.50
56	To a dull World	9	1.93	125	To the Tv	1	0.21
57	To a mobile phone	7	1.50	126	To an angel that has all the information	1	0.21
58	To eating chocolate	2	0.42	127	To sightsee in the bazaar alone	1	0.21
59	To a multi-purpose device	1	0.21	128	To the flying carpet	3	0.64
60	To a vehicle, automobile travelling around the world	1	0.21	129	To usb	1	0.21
61	To meeting with the World	6	1.28	130	To a door opened for the space	1	0.21
62	To bring out the World	1	0.21	131	To looking to the world from the space	1	0.21
63	To a tulle covering the World	2	0.42	132	To the remote controller	2	0.42
64	To go to a world journey	15	3.21	133	To the space	8	1.71
65	To the brain of the World	4	0.85	134	To vitamin	1	0.21
66	To the veins of the world	1	0.21	135	To the world I live	24	5.15
67	To the fastest car of the world	2	0.42	136	To eating	2	0.42
68	To the light penetrating into World	1	0.21	137	To the mirror of life	1	0.21
69	To be the judge of the World	2	0.42	138	To the cube of intelligence	2	0.42

Table 2.The metaphors expressed about being the owner of a computer and the percentage and number of students that represents them (in an alphabetic sequence).

The students generated totally 138 valid metaphors in accordance with the given sentences : Internet resembles to…..; because…..(table 2). When generally analyzed, internet was likened to "the box of information"(n=29,%6.22), " to the world I live in"(n=24,%5.15), "to go to a world journey"(n=15,%3.21), " to a book"(n=14,%0.64), " to the teachers at school" . These were the most used comparisons. The sixth grade students generated 84, seventh grade students generated 90 and the eighth grade students generated 57 metaphors. In order to classify these metaphors, nine conceptual categories were developed. The classified metaphors named " as a source of application"(n=119,%25.23), "as a source of game and entertainment" (n=42,%9.01), "as a source of consumption"(n=15,%3.21), "as a source of sightseeing (n=124,%26.60), "as a source of communication"(n=27,%5.79), " as a source of relief" (n=14,%3.00), "as an abstract concept"(n=47,%10.08), "as an indispensable source"(n=46,%9.87 and "as a source of negativity" (n=37,%7.93). The common metaphors generated by all of the students were successively: 1. To a clever library(%3.58), 2. To an encylopedia(%1.28), 3. To the salad of information(%0.42), 4. To the box of information(%6.50), 5. To a book(%0.64) 6. To a friend(%5.15) 7. To be together with my friends(%0.64) 8. To a pet(%0.85), 9.To a plane/jet(%1.50), 10.To a butterfly(%0.42) 11. To a dull world(%4.72) 12. To go to a journey of the world(%4.93),13. To the window open for the world(%4.93),14. To my palm(%1.50), 15. To a magical sphere(%2.36), 16. To a life (%0.42) 17. To a door open for the world(%1.07) 18. To the space(%0.85), 19. To have twin sisters(%2.57),20. To the Sun(%1.07), 21. To the world I live(%1.50), 22. To a person in the prison(%2.14)Nine conceptual categories developed in this research are described as below. Then, these conceptual categories are compared in terms of the class level.

Conceptual Categories

1. As source of application

	The name of the metaphor	6.grade	7.grade	8.grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To the abacus	1 (0.21)	2 (0.42)	-	3 (0.64)
2	To a clever person	3 (0.64)	1 (0.21)	-	4 (0.85)
3	To a clever library	2 (0.42)	3 (0.64)	3 (0.64)	8 (1.71)
4	To a bulb	-	1 (0.21)	2 (0.42)	3 (0.64)
5	To father or mother	1 (0.21)	-	-	1 (0.21)
6	To an encylopedia	1 (0.21)	1 (0.21)	5 (1.07)	7 (1.50)
7	To the magical lamp of Alaaddin	1 (0.21)	-	-	1 (0.21)
8	To the exchange of information	-	1 (0.21)	-	1 (0.21)
9	To the tree of information	2 (0.42)	1 (0.21)	-	3 (0.64)
10	To the world of information	1 (0.21)	1 (0.21)	-	2 (0.42)
11	To the salad of information	1 (0.21)	4 (0.85)	1 (0.21)	6 (1.28)
12	To the box of information	18 (3.86)	7 (1.50)	4 (0.85)	29 (6.22)
13	To the bazaar of information	-	1 (0.21)	-	1 (0.21)
14	To the machine of information	1 (0.21)	1 (0.21)	-	2 (0.42)
15	To a scholar	2 (0.42)	-	1 (0.21)	3 (0.64)
16	To a research center	4 (0.85)	1 (0.21)	-	5 (1.07)
17	To a packet including information, game and chat	-	1 (0.21)	-	1 (0.21)
18	To a scientist	1 (0.21)	4 (0.85)	-	5 (1.07)
19	To a brain	2 (0.42)	1 (0.21)	-	3 (0.64)
20	To an inventor	3 (0.64)	3 (0.64)	-	6 (1.28)
21	To a book	5 (1.07)	6 (1.28)	3 (0.64)	14 (3.00)
22	To an ocean	-	-	2 (0.42)	2 (0.42)
23	To a donkey	-	2 (0.42)	-	2 (0.42)
24	To a philosopher	-	2 (0.42)	7 (1.50)	9 (1.93)
25	To a creature that knows everything	2 (0.42)	-	-	2 (0.42)
26	To the ants	1 (0.21)	-	3 (0.64)	4 (0.85)
27	To school	1 (0.21)	1 (0.21)	-	2 (0.42)
28	To the teachers at school	8 (1.71)	4 (0.85)	-	12 (2.57)
29	To odevmatik(homework machine) and bilgimatik (knowledge machine)	-	1 (0.21)	1 (0.21)	2 (0.42)
30	To an angel that knows everything	1 (0.21)	-	-	1 (0.21)
31	To the usb	-	1 (0.21)	-	1 (0.21)
32	To the brain of the World	3 (0.64)	1 (0.21)	-	4 (0.85)
33	To the cube of intelligence	-	-	2 (0.42)	2 (0.42)
	Total				
	Student	65 (13.94)	52 (11.15)	34 (7.29)	151 (32.40)
	Metaphor	23 (16.66)	25 (18.11)	12 (8.69)	33 (23.91)

Table 3 . The metaphors developed as a source of application

Totally 151 students(%32.40) and 33 metaphors(%23.91) represented that category.(see Table 3). The dominant five metaphors in this category are as follows: Internet resembles 1.To the box of information(%6.22), 2. To a book(%3.00), 3.To the teachers at school(%2.57),4. To a philosopher(%1.93),5. To a clever library(%1.71). Clever library, encylopedia, the salad of information and the book are the common metaphors used by all the participants. The basic features of the metaphors forming up this category are:

- The concept of internet was likened to an application source.(*to a clever library, to an encylopedia, to a packet including information, game and chat).*

"Internet resembles to the ***clever library*** *because searching is more comfortable than in a classic library. The duration of research is more practical, as soon as you write the key words in the search engine , it comes up with what your are looking for, no need to stand up and try hard."(Y/7/K)*

"Internet resembles to an encylopedia because it has so much information that I do not know".

" Internet resembles to a packet including information, game, and chat. I can do whatever I want easily." (D/7/E).

- Internet resembles to a brainy person.*(to a clever person, to father or mother, to a scholar).*

"Internet resembles to brainy person as everything written pretends to be in a clever person's brain, internet is like a person who knows everything."(Y/6/E).

" Internet resembles to a father or mother because internet does everything we want just like our mother and father do, you can consult to the computer about something just as you can do to your father and mother, it leads and informs you."(D/6/K).

"Internet resembles to a scholar. It knows whatever you ask.(D/6/K).

2. As a source of game and entertainment

	The name of metaphor	6.grade	7. grade	8. grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To the game played with a friend	2 (0.42)	1 (0.21)	-	3 (0.64)
2	To my friend	2 (0.42)	4 (0.85)	3 (0.64)	9 (1.93)
3	To be together with our friends	3 (0.64)	1 (0.21)	1 (0.21)	5 (1.07)
4	To diddle	-	1 (0.21)	-	1 (0.21)
5	To the box of entertainment	-	2 (0.42)	-	2 (0.42)
6	To the window open for the entertainment	2 (0.42)	-	2 (0.42)	4 (0.85)
7	To a pet	1 (0.21)	1 (0.21)	1 (0.21)	3 (0.64)
8	To a cat	-	2 (0.42)	-	2 (0.42)
9	To an entertainment park	-	-	1 (0.21)	1 (0.21)
10	To a cheerful life	-	-	1 (0.21)	1 (0.21)
11	To the game cards	-	1 (0.21)	-	1 (0.21)
12	To my toy	-	1 (0.21)	-	1 (0.21)
13	To the game console	-	1 (0.21)	-	1 (0.21)
14	To the game	1 (0.21)	5 (1.07)	-	6 (1.28)
15	To the house of game	-	1 (0.21)	-	1 (0.21)
16	To do sports	-	-	1 (0.21)	1 (0.21)
	Total				
	Student	11 (2.36)	21 (4.50)	10 (2.14)	42 (9.01)
	Metaphor	6 (4.34)	12 (8.69)	7 (5.07)	16 11.59)

Table 4. The metaphors developed as a source of game and entertainment

According to the Table 4, the number of the students representing the " internet resembles to the game and entertainment source" category is 42(%9.01). The dominant five metaphors in this category are: Internet resembles 1. To my friend (%1.93) 2.To game(%1.28) 3. To be together with our friends(%1.07) 4. To the window open for the entertainment (%0.85), 5.to the game played with a friend(%0.64). The metaphors of *being always together with our friends* and *the pet* are used commonly by all the participants. The basic features of the metaphors used in this category are:

- Internet was likened to a friend and to spending time with our friends.*(to my friend and to be always together with my friend).*

*" Internet resembles to **my friend** because everything I want happens and I can share everything with it just like I do with my friend"*(D/7/E).

*"Internet resembles to **be together with our friends** because we can talk to our friends via internet, we can communicate with our friends as if we are together even if we are not in the same house."*(D/7/E).

- Internet was likened to the entertainment, game and toys. (***to the game cards, to the toy, to a window open for the entertainment**).*

*"Internet resembles to **the game cards** because via the internet I can both entertain and learn, I have many alternatives suc as game cards"*.(Y/7/K).

*"Internet resembles to **toys** because I can play any time I want for hours without getting bored."*(D/7/K).

*"Internet resembles to **window openinig to the entertainment** because when you open the window/internet you won't get bored. It is always colourful and entertaining.*

1. *As a source of consumption*

	The name of the metaphor	6.grade	7. grade	8. grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To eating junk food	-	1 (0.21)	-	1 (0.21)
2	To the shopping mall	-	-	1 (0.21)	1 (0.21)
3	To a servant	3 (0.64)	1 (0.21)	-	4 (0.85)
4	To eating chocolate	-	1 (0.21)	1 (0.21)	2 (0.42)
5	To a multi-purpose goods	-	-	1 (0.21)	1 (0.21)
6	To the chocolate cake	-	1 (0.21)	-	1 (0.21)
7	To the fashion house	-	1 (0.21)	-	1 (0.21)
8	To Oburix	-	2 (0.42)	-	2 (0.42)
9	To eating	-	2 (0.42)	-	2 (0.42)
	Total				
	Student	3 (0.64)	9 (1.93)	3 (0.64)	15 (3.21)
	Metaphor	1 (0.72)	7 (5.07)	3 (2.17)	9 (6.52)

Table 5. The metaphors developed as the source of consumption

Nine metaphors and 15 students(%3.21) represent this category totally (See Table 5). The dominant two metaphors in this category are : internet resembles 1. To a servant(%0.85) 2. To eating chocolate (%0.42) 3. To Oburix (%0.42) 4. To eating(%0.42). The basic features of the metaphors in this category are:

Internet was likened to eating something.*(**to eating junk food/ to eating chocolate/to eating chocolate cake**).*

*" Internet resembles to **eating junk food** because while using the internet he feels happy as much as he is when he eats junk food."*(D/7/K) .

*"Internet resembles to **eating chocolate**, because when you eat chocolate you can't give up and when you begin to surf in internet you can't stop youself."*(D/7/K).

*"Internet resembles to **chocolate cake** because when you sit for eating it you don't want to stand up, internet is also just like this"*(D/7/E).

2. As a source of roam

	The name of the metaphor	6.grade	7.grade	8.grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To an opened page	-	1 (0.21)	-	1 (0.21)
2	To a plane/jet	4 (0.85)	4 (0.85)	2 (0.42)	10 (2.14)
3	To riding a bike	1 (0.21)	4 (0.85)	-	5 (1.07)
4	To a butterfly	2 (0.42)	1 (0.21)	2 (0.42)	5 (1.07)
5	To a city	2 (0.42)	-	2 (0.42)	4 (0.85)
6	To a discoverer	1 (0.21)	-	-	1 (0.21)
7	To a big circle	-	1 (0.21)	1 (0.21)	2 (0.42)
8	To watching all the World	1 (0.21)	1 (0.21)	-	2 (0.42)
9	To the streets	5 (1.07)	-	1 (0.21)	6 (1.28)
10	To a dull World	3 (0.64)	4 (0.85)	2 (0.42)	9 (1.93)
11	To a vehicle automobile roaming around the world	1 (0.21)	-	-	1 (0.21)
12	To meeting with the World	1 (0.21)	-	5 (1.07)	6 (1.28)
13	To bring out the World	-	1 (0.21)	-	1 (0.21)
14	To a tule covering all the World	2 (0.42)	-	-	2 (0.42)
15	To go to a world journey	1 (0.21)	6 (1.28)	8 (1.71)	15 (3.21)
16	To the fastest car of the World	1 (0.21)	1 (0.21)	-	2 (0.42)
17	To be the judge of the World	2	-	-	2 (0.42)
18	To make the world become a small village	1 (0.21)	-	2 (0.42)	3 (0.64)
19	To the window opened for the World	5 (1.07)	7 (1.50)	10 (2.14)	22 (4.72)
20	To see over a house	-	-	1 (0.21)	1 (0.21)
21	To my palm	1 (0.21)	2 (0.42)	3 (0.64)	6 (1.28)
22	To the mysterious World	-	-	1 (0.21)	1 (0.21)
23	To the treadmill	-	1 (0.21)	-	1 (0.21)
24	To a sphere	2 (0.42)	-	-	2 (0.42)
25	To a motorbike	-	-	1 (0.21)	1 (0.21)
26	To surfing	-	2 (0.42)	-	2 (0.42)
27	To a magical sphere	2 (0.42)	4 (0.85)	1 (0.21)	7 (1.50)
28	To roaming in the bazaar alone	-	1 (0.21)	-	1 (0.21)
29	To a flying carpet	2 (0.42)	-	1 (0.21)	3 (0.64)
	Total				
	Student	40 (8.58)	41 (8.79)	43 (9.22)	124 (26.60)
	Metapfor	20 (14.49)	16 (11.59)	16 (11.59)	29 (21.01)

Table 6. The metaphors developed as a source of roam

According to the Table 6, the number students representing the category of "internet resembles to roaming" is 124(%26.60) and 29 metaphors were developed. The five dominant metaphors in this category are successively stated as: internet resembles 1. To the window opened for the world (%4.72), 2. To go to a world journey(%3.21) 3. To a plane/jet (%2.14) 4. To a dull world (%1.93), 5. To a magical sphere(%1.50). To the plane/jet , to a butterfly, to a dull world, to go to a world journey , to a window open for the world, to my palm, to a magical sphere were the metaphors used in common by all the participants. The basic features of the metaphors used in this category are:

- Internet was likened to travelling/roaming.*(**to a plane/jet, to go to a world journey, to the fastest car of the world**).*

*" Internet resembles to **a plane/jet** because we can go wherever we want in a short time.*(D/6/E)".

*"Internet resembles to **go to a world journey** because we can go wherever we want with no expense and effort but just imaginary"*(D/8/K)

*"Internet resembles to **the fastest car of the world** because it finds the information immediately as if a fast car went and brought it.*(O/6/E).

- Internet was likened to a place/area.*(**to a big circle, to a city, to a Street, to a dull world**).*

*"Internet resembles to **a big circle**, because there is everything like entertainment, information in it, we can meet a person from any country of world easily.*(D/7/E)."

*" Internet resembles to **a city**, because in each address there are different contexts like various streets and avenues of a city.* (D/8/E).

*" Internet resembles to **a street** because as it is in the streets, there are so many places to go via internet."*(D/8/K).

*"Internet resembles to **a dull** world, everything is imaginary, dull, not real but it is active and cheerful just like the real world."*(D/7/E).

3. As a communication source

	The name of the metaphors	6.grade	7.grade	8.grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To a letter bird	2 (0.42)	1 (0.21)	1 (0.21)	4 (0.85)
2	To a big spider web	2 (0.42)	1 (0.21)	6 (1.28)	9 (1.93)
3	To millions of people roaming around a cable	1 (0.21)	-	2 (0.42)	3 (0.64)
4	to a mobile phone	2 (0.42)	2 (0.42)	3 (0.64)	7 (1.50)
5	To the veins of the World	-	1 (0.21)	-	1 (0.21)
6	To the light penetrating into the world	-	1 (0.21)	-	1 (0.21)
7	To the rope stretching to the world	-	1 (0.21)	-	1 (0.21)
8	To the Tv	1 (0.21)	-	-	1 (0.21)
	Total				
	Student	8 (1.71)	7 (1.50)	12 (2.57)	27 (5.79)
	Metaphor	5 (3.62)	6 (4.34)	4 (2.89)	8 (5.79)

Table 7. The metaphors developed as a communication source

According to Table 7, the number of the students likening the internet to a source of information is 27 (%5.79). The students developed 8 metaphors. The three dominant metaphors in this category: Internet is stated to resemble 1.To a big spider web (%1,93) 2. To a mobile phone(%1.50), 3. To a letter bird(%0.85). A letter bird, a big spider web and the mobile phone are the common metaphors stated by all the students. The basic features of the metaphors used in this category are:

- Internet was likening to an entity.(***to a letter bird, to a big spider web, to millions of people roaming around a cable.)***

*"Internet resembles to **a letter bird** because it conveys everything I want to my friends"*(Y/7/K).

"*Internet resembles to **a big spider** web because it has so many webs just like the spider webs".(*D/8/K).

*" Internet resembles to **millions of people roaming around a cable**, because we can watch them on the internet, we can play with them and we don't get bored"*(D/6/E).

- Internet *was* likened to a good. (***mobile phone, Tv**)*

*" Internet resembles to **a mobile phone** because you can communicate easily with everybody through the internet".*(Y/7/K).

"*Internet resembles to **a Tv** because we can watch whatever we want"*(D/6/K).

- The world was personilised and the internet was resembled to something in the world.(***to the veins of the world, to the rope stretching to the world**).*

*" Internet resembles to **the veins of the world** because internet conveys everything around the world just like the blood stream in the body of a person."*(Y/7/K).

" *Internet resembles to **a rope stretching to the world** because it connects us to everywhere, the world is just at the tip of the rope and we can watch the world easily.*(D/7/K).

6. As a source of comfort

	The name of the Metaphor	6.grade	7.grade	8.grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To a home	2 (0.42)	-	-	2 (0.42)
2	To the door of my house	2 (0.42)	2 (0.42)	-	4 (0.85)
3	To my own fantasy world	1 (0.21)	-	-	1 (0.21)
4	To a comfortable Tv	1 (0.21)	1 (0.21)	-	2 (0.42)
5	To a chair	1 (0.21)	-	-	1 (0.21)
6	To a ball of stres	1 (0.21)	1 (0.21)	-	2 (0.42)
7	To a remote- controller	1 (0.21)	-	1 (0.21)	2 (0.42)
	Total				
	Student	9 (1.93)	4 (0.85)	1 (0.21)	14 (3.00)
	Metaphor	7 (5.07)	3 (2.17)	1 (0.72)	7 (5.07)

Table 8. The metaphors developed as a source of comfort

According to the Table 8, 7(%5.07) metaphors were developed as a source of comfort by 14 students(%3.00). The dominant metaphor in this category is "internet resembles to the door of my home"(%0.85). There is no common metaphor used by the 6-7-8th grade students. The basic features of the metaphors used in this category are:

Internet was likened to an object by the students.*(**to a house, to the stress ball, to the remote controller**).*

*" Internet resembles to **a home** because you can do everything easily and comfortably as if you are at home.*(D/6/K).

*"Internet resembles to **the stress ball** because when we get tired or get angry we can get relaxed owing to it"*(O/7/E).

*"Internet resembles to **a remote-conroller** because we can do everything where we sit."*(D/6/K)

7. As an abstract concept

	Metafor adı	6.sınıf	7.sınıf	8.sınıf	Toplam
		f (%)	f (%)	f (%)	f (%)
1	To a dream	2 (0.42)	-	7 (1.50)	9 (1.93)
2	To a key	1 (0.21)	1 (0.21)	-	2 (0.42)
3	To a life	1 (0.21)	4 (0.85)	2 (0.42)	7 (1.50)
4	To a rainbow	-	-	3 (0.64)	3 (0.64)
5	To a door open for the world	2 (0.42)	2 (0.42)	1 (0.21)	5 (1.07)
6	To an energy that has no end	-	1 (0.21)	-	1 (0.21)
7	To fill up an empty glass	1 (0.21)	-	-	1 (0.21)
8	To freedom	4 (0.85)	3 (0.64)	-	7 (1.50)
9	To an imaginary world	1 (0.21)	-	-	1 (0.21)
10	To a magical mirror	-	1 (0.21)	-	1 (0.21)
11	To a door opened for the space	-	1 (0.21)	-	1 (0.21)
12	To looking to the world from the space	1 (0.21)	-	-	1 (0.21)
13	To the space	4 (0.85)	1 (0.21)	3 (0.64)	8 (1.71)
14	To the mirror of life	-	-	1 (0.21)	1 (0.21)
	Total				
	Student	17 (3.64)	14 (3.00)	17 (3.64)	48 (10.30)
	Metaphor	8 (5.79)	8 (5.79)	6 (4.34)	14 (10.14)

Table 9. The metaphors developed as an abstract concept

According to the table 9, the number of the students that likened the internet to an abstract concept is 48(%10.30). The students developed 14 metaphors.(%10.14). The three dominant metaphors in this category are successively: internet resembles 1. To a dream(%1.93) 2.To space(%1.71) 3. To life(%1.50) 4. To freedom(%1.50). The life, the door opening to the life and space metaphors are the metaphors used by all the students. These are the basic features of the metaphors forming up this category.

- Internet was likened to an object. ***(key, magical mirror)***.

*"Internet resembles to **a key** because we can enter everywhere and everything via it"*(Y/7/E).

*"Internet resembles to **a magical mirror** because I can see the people I want to see and I can communicate with them."*(O/7/K)

- Internet was likened to an unreal concept.***(to a dream/ to freedom to the mirror of the world)***.

*" Internet resembles to **a dream** because we go to the places that we don't even imagine without any expenses."*(O/8/E).

*"Internet resembles to **freedom** because we can do whatever we want without asking anything to anyone."*(D/6/K).

"*Internet resembles to **the the mirror of life** because it reflects us like in a mirror , we can get everything off our chest, internet is always ready to do whatever you want.*(D/8/K).

- Internet was likened to the things on the sky.(***to the rainbow/to the space***).

*"Internet resembles to **a rainbow** because it has millions of video and information so we don't get bored."*(Y/8/K).

*" Internet resembles to **space** because it can host everything in it and we can look at the thing we want forever."*

8. As a an indispensable source

Table 10. The metaphors developed as an indispensable source

	The name of the Metaphor	6.grade	7.grade	8.grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To the search-rescue party	-	-	2 (0.42)	2 (0.42)
2	To the passion of computer	1 (0.21)	-	-	1 (0.21)
3	To our having twin sisters	1 (0.21)	4 (0.85)	2 (0.42)	7 (1.50)
4	To our most important need	-	1 (0.21)	-	1 (0.21)
5	To the most important invention	-	1 (0.21)	-	1 (0.21)
6	To the Sun	3 (0.64)	1 (0.21)	1 (0.21)	5 (1.07)
7	To doing the daily Works	-	-	1 (0.21)	1 (0.21)
8	To a life-easening opportunity	2 (0.42)	-	-	2 (0.42)
9	To coming of the light to a dark house	1 (0.21)	-	-	1 (0.21)
10	To a vitamine	1 (0.21)	-	-	1 (0.21)
11	To the world I live	9 (1.93)	9 (1.93)	6 (1.28)	24 (5.15)
	Total				
	Student	18 (3.86)	16 (3.43)	12 (2.57)	46 (9.87)
	Metaphor	7 (5.07)	5 (3.62)	5 (3.62)	11(7.97)

According to the table 10, the number of the students likening internet to an indispensable source is 46 (%9.87). The students developed 11 metaphors.(%7.97). The dominant metaphors used in this category are successively stated as: internet resembles

1. To the world I live(%5.15) 2. To twin sisters/siblings (%1.50), 3. To the Sun(%1.07). The twin sisters, the Sun and the world we live are the metaphors used in common by the participants. The basic features of the metaphors used in this category:

Internet was likened to an indispensable source.(***to the passion of computer, to the most important discovery, to the Sun***) .

" Internet resembles to ***the passion of computer*** *because computer without internet is not a computer."*(D/6/K).

"Internet resembles to ***the most important discovery*** *because people would not have done anything without the internet."* (D/7/E)

"Internet resembles to ***the Sun*** *because it sheds light and information to everywhere and it reaches everywhere."* (D/8/K)

9. To a source of negation

	The name of the metaphor	6.grade	7.grade	8.grade	Total
		f (%)	f (%)	f (%)	f (%)
1	To the alcoholic drinks	2 (0.42)	6 (1.28)	-	8 (1.71)
2	To the things that make addiction	1 (0.21)	-	-	1 (0.21)
3	To a monster	2 (0.42)	5 (1.07)	-	7 (1.50)
4	To a King	1 (0.21)	1 (0.21)	-	2 (0.42)
5	To a magnet	-	1 (0.21)	-	1 (0.21)
6	To the cigarette	-	1 (0.21)	1 (0.21)	2 (0.42)
7	To an empty vehicle	-	-	1 (0.21)	1 (0.21)
8	To the cause of the defect of eyes	1 (0.21)	-	-	1 (0.21)
9	To a man in the prison	4 (0.85)	3 (0.64)	2 (0.42)	9 (1.93)

10	To a bad habit	2 (0.42)	1 (0.21)	-	3 (0.64)
11	To a hollow that have no end	-	2 (0.42)	-	2 (0.42)
	Total				
	Student	13 (2.78)	20 (4.29)	4 (0.85)	37 (7.61)
	Metafor	7 (5.07)	8 (5.79)	3 (2.17)	11(7.97)

Table 11. The metaphors developed as a source of negation

According to the Table 11, 37 students (%7.61) developed 11 metaphors about likening the internet to a source of drawback. Four metaphors that are dominant in this category are successively expressed as: internet resembles 1. To a man in the prison(%1.93) 2. To alcoholic drinks(%1.71) 3. To a monster(%1.50) and 4. To a bad habit(%0.64). "The man in the prison metaphor"was used commonly by all the students. The basic metaphors that formed up this category are:

- Internet was likened to harmful habits.(***to the alcoholic drinks/ to the things that made addiction, to a bad habit***)

*"Internet resembles to **the alcoholic drinks** because the more you use it the more you will be accustomed to, you will be addicted."*(D/7/E).

*"Internet resembles to **the things that made addiction** because it endears itself sneakingly, then it makes addiction and brings about bad results, it destroys the relationship with your family and the result is a total disaster"*.(D/6/K)

*"Internet resembles to **a cigarette** because it makes you addicted."*(D/8/K).

- Internet was likened to an entity or an object.***(to the monster, to a man in the prison, to the hollow that has no end.)***

*"Internet resembles to **a monster** because it takes the person captive just like a monster and it gives harm, it devastates the person*.(Y/7/E).

*" Internet resembles to **a king** because we find ourselves under his command only after a short time and it controls us."*(O/7/E).

*" Internet resembles to **a man in the prison** because it has people roaming in it but they cannot go out even if the want."*(D/6/E).

"*Internet resembles to **a hollow** that has no end because it has everything in it, everything is ready but if you fall down you can't get out."*(D/7/E).

4. Conclusion

The general aim of this study is to determine the metaphors developed by the students. One of the aims of this research is to put forward the secondary school students' comprehension of the internet through creating metaphors. As we didn't encounter the letters in the metaphor study of the students related to the concept of internet, the finds obtained in this research were discussed along with the finds about how the students perceived the internet concept.

The finds of this research, of which aim is to reveal the mental images of the students related to the internet concept draw attention to a few important points. First of all; in order to explain the internet concept as a whole we need a lot of metaphors. For instance; when we look at the number of the metaphor categories, it is seen that most of the students(%32.40) likened the internet to a "source of information and application". The primary school students likened the internet that they had expressed as a source of application to an object(abascus, bulb, usb, book etc.), to a person (clever person, father-mother, scholar, philosopher etc), to a source of information (clever library, encylopedia, tree of information, the salad of information etc), to an animal (to a donkey, to a creature that know everything, the ants etc.), to a machine (machine of information, ödevmatik, bilgimatik) or to an ocean. In the research of Ersoy and Türkan [3], the primary school students likened the internet mostly to the source of information.(%78.3). It was found out that there were many differences in the sources of information that the internet was likened to. For instance; while book and teacher metaphors were used most, the encylopedia was the least used metaphor.

In the metaphors developed by the students there are both positive and negative perceptions. The students who saw the internet as a source of negativity, likened it to an alcoholic drink, to the addictive things, to a monster and to a king. In this case it can be said that the matter of likening the internet to can not be completely clarified by only one metaphor. But the rate of the students who expressed their opinions as a source of negativity is

lower (%7.61) . When generally analyzed, it is seen that the five most used metaphors are : 1. To the box of information(n=29,%6.22). 2. To the world they live(n=24,%5.15) . 3. To go to a journey of the world(n=15,%3.21) 4. To a book(n=14,%0.64) 5. To the teachers at school (n=12,%2.57). When we examined these metaphors, we saw that the internet was likened to the source of information, to the world they live, to travel around the world. On the other hand, when it is considered that the students are in adolescence during which period the friendship has an important role , it is not surprising that they likened the internet to a friend (n=9,%1-93), to the game played with a friend (n=3,%0.64), to be together with friends (n=5,%1.07) .

As a result, through this research it has been tried to analyze the students' mental images about the internet and it was seen that the students developed some positive images. It can be remarked that the computer distribution project that Kocaeli Metropolitan Municipality started is one of the most important steps in preparing the young who are today's students but tomorrow's adults for the future. The metaphors were used as a tool of research in determining the mental images that the students have for a concept.

In this context, the students of different education levels may be asked to develop different metaphors about the internet concept. After the students analyzed their own metaphor images and were aware of the alternative conceptualization that the images offered in relation to specific facts, they can be introduced some new metaphor images enabling new perspectives and different educational facts. In future studies, the research may be more detailed such as talking to and receiving students' opinions on the concept of internet. The opinions of the teacher's, manager's and the parents' can be taken about this social responsibility project, as well.

REFERENCES

[1]. Akkoyunlu, B. & Yılmaz, E. (2005). The teacher candidate's level of literacy and the frequency of the internet usage. *Researches of Educatiom,* 19, 1-4.

[2]. Aksan, Doğan (1993). *"The Education of Mother Tongue"*. The seventh Judgment of Linguistics Annual Meeting, May 13-14 1993, Ankara, DTCF, s.201-202.

[3]. Ersoy, A. & Turkan, B. (2009). In the picture of Primary School Students& The perception of Internet. *Elementary Education Online*, 8(1), 57-73, 2009. Access date: 23.12.2011. http://ilkogretim-online.org.tr

[4]. Kaptan, S. (1995). *The techniques of research and statistics.* Ankara: Tekışık Publications

[5]. Karasar, N. (2007). *The methods of scientific research*(17th print). Ankara: Nobel Publications.7

[6]. Kaya, Z. (2005). *Insructional Technologies and Developing Materials,* Ankara: Pegem PublicationsMiles, M. B. & Huberman, A. M. (1994). *An expanded sourcebook qualitative data analysis*. (Second Edition). California: Sage Pablications, Inc.

[7]. Saban, A. (2008). Metaphors about the school. In the Implementation and theory. *Educational Administration: Theory and Practice*, 55, 459-496.

[8]. Saban, A., Koçbeker , B.N.& Saban, A. (2005). "*The Metaphors the teacher candidates have related to the concept of Teacher*.", XIV The Congress of National Educational Sciences. 28-30 September – Denizli.

[9]. Sarı, F. (2000). How can we benefit from the internet in the education atmosphere? Access date: 12.06.2010. http://bilkom.com.tr.

[10]. The Statistics of m Society, (2011). Access date: 09.02.2012 http://www.bilgitoplumu.gov.tr/ Documents/1/Diger/Bilgi Toplumu Istatistikleri 2011.pdf

[11]. Yıldırım, A. & Simsek, H. (2005). *The qualitative research methods in Social Sciences.* Ankara: Seçkin Printing.

Corresponding author: *Arzu Deveci Topal*
Institution: *Kocaeli University, Department of Informatics, Umuttepe Yerleşkesi-41380 ,Kocaeli-Turkey*
E-mail: *arzudevecit@gmail.com*