



AWERProcedia Information Technology & Computer Science



Vol 04 (2013) 505-510

3rd World Conference on Innovation and Computer Sciences 2013

Evaluation of the Opinions of Computer Using Academicians in terms of Data Waste

Murat Tuncer *, Assist. Prof. Dr., Firat University, Department of Educational Sciences, Elazig 23119 TURKEY.

Feyzi Kaysi, Res. Assist., İstanbul University Vocational School of Technical Sciences ISTANBUL.

Suggested Citation:

Tuncer M. & Kaysi F. Evaluation of the Opinions of Computer Using Academicians in terms of Data Waste. *AWERProcedia Information Technology & Computer Science*. [Online]. 2013, 04, pp 505-510. Available from: www.awer-center.org/pitcs

Received December 24, 2012; revised January 13, 2013; accepted March 09, 2013.

Selection and peer review under responsibility of Prof. Dr. Fahrettin Sadıkoğlu, Near East University.

©2013 Academic World Education & Research Center. All rights reserved.

Abstract

Researchers, educators and learners constantly backup processed or raw data they work on for the purpose of reusing them. However, the data backed up by these circles in order to prevent data losses and for better organizing their past works in the future go missing in time, their old forms cannot be reached and files of varying contents are found in many different environments. Emphasizing on this point, data waste scale which was used in the present study for data collection. From this aspect, the study was conducted in scanning model. The data collection tool was applied to 81 academicians from Firat and Tunceli Universities. Some of the findings of the study indicate that there is no significant difference between the obtained scale points in terms of gender and that there is a significant difference in favor of the academicians in Tunceli University in terms of the confusion dimension of the scale. It was also determined that it is the academicians' concerns for losing data that primarily causes data losses.

Keywords: Data Waste, Academicians, Learning Losses, Data Backup, Electronic Documents;

*ADDRESS FOR CORRESPONDANCE: **Murat Tuncer**, Assist. Prof.Dr., Firat University, Department of Educational Sciences, Elazig 23119 TURKEY, Email Address: mtuncer@firat.edu.tr, fezykaysi@gmail.com

Introduction

Each technological innovation somehow affects human life. This effect is a new situation to be handled by each organism. As the theory of evolution indicates, an important feature of the process of technological innovation is that this process includes uncertainty. For this reason, before using new technologies effectively, people appeal to activities of formal and non-formal education in order to overcome the deficiencies of information and skills related to these new technologies. In a sense, they try to respond this state of uncertainty with the new state of balance. In many cases, people try to overcome such shortcomings through individual activities of learning, in which trail-and-error method is dominant.

According to Altun (2005:12), in addition to the concept of general literacy, electronic and information based literacy should also not be ignored for explaining new developments of technology and their spread to the society. If individuals or societies stay out from technological developments, this means that individuals and societies are also staying out of life (Kabakçı and Odabaşı, 2004).

The opportunities provided by technology facilitate human life. However, there is another viewpoint within the academic community on this issue. Some scholars have adopted a prejudiced approach and gave up sceptic and cautious attitudes towards technology. One of the significant indicators of this situation is attributing technology a decisive and direct role with no regard to the characteristics such as attitudes aimed by education activities, content presented, resources and opportunities and the qualifications of learners. In accordance with Bruner's (2009: 66-67) view that "technological tools are facilitating teaching for teachers; however, it is still early to evaluate final use of these tools", we should develop an approach based on common sense.

This research discusses a new concept called "data waste" which is believed to be appeared due to computer oriented studying and learning. This concept can be defined as data losses, which appeared due to activities of back up, or reorganization particularly by students and academics or general computer users in order to pursue learning and teaching activities.

Several findings and views on this concept have begun to appear frequently in the literature. For instance, According to Ataman (2012), frequent use of computers in production of documents and information resulted in huge amount of information. Checking and using this amount of information is becoming gradually impossible. As Aydın and Özdemirci (2011, quoted from Rhodes 1991:16) draw attention to the necessity for planning and underline several issues such as the importance of archive formats in keeping the archives of electronic documents, the duration of archiving, users' access to documents and life circle of the archived documents. On the other hand, In Tonta (1996, quoted from Graham, 1994)'s research, which adopts a more technical approach, it is stated that "it is not enough to secure media to protect electronic data. Additionally, essential technology and intellectual content should be under protection in order to read or view recorded information on that particular media."

This research was conducted through a group of academics, who use computers frequently in their researches and who are always concerned with the data loss. Thus, the research is considered to contribute in explaining this new phenomenon from the point of several variables.

Method

The research was conducted by using descriptive survey model. Karasar (2009:76) defines the model as the description of the situation as it is. Ekiz (2009:116) lists low costs, confidentiality, being free from prejudices and convenience of the analysis as the advantages of this model. In this research, D- Waste scale, developed by Tuncer (2012), was used. The scale consists of 13 articles; it has a four-factor structure. Cronbach Alpha Coefficient was found 0,824. Data was collected through the application of D-Waste scale to 81 academics in Universities of Firat and Tunceli. The research covers 53 (65,4%) male and 28 (34,6%) female academics. 2 of them are professors, 14 are associated

professors, 40 are assistant professors and 25 are teaching assistants including experts and research assistants. 37 (45,7%) of the academics work at the University of Firat, 44 (54,3%) of them work at Tunceli University. Within the scope of the research, these questions were asked to academics: Why do you use computers and which programs were installed in your computers. The answers to these questions are shown in Table 1.

Table 1: The purpose of computer use and installed programs for academics

Purpose of use								Installed Programs							
Research	E-mail	Reading newspapers	Social Networks	Chat	Other	f	%	Operating System	Word Processor	Data Analysis	Drawing	Web Design	Other	f	%
•						5	6,2	•						13	16,0
•	•					11	13,6	•	•					8	9,9
•	•	•				27	33,3	•		•				6	7,4
•	•		•			3	3,7	•			•			5	6,2
•		•	•			1	1,2		•	•				4	4,9
•	•	•	•			24	29,6			•	•			2	2,5
•	•	•			•	1	1,2	•	•	•				15	18,5
•	•	•	•	•		9	11,1	•		•	•			8	9,9
					Total	81	100,0	•	•	•	•			4	4,9
								•	•	•		•		2	2,5
								•	•	•	•	•		8	9,9
													Total	81	100,0

Reading newspapers and e-mails (27 persons, 33, 3%) is the most common purpose of using computer among academics. Operating systems, word processor and data analysis programs (15 persons, 18, 5 %) are the most common programs installed by the academics.

Another question asked to the academics is the duration of the oldest file saved in their computers. The answers are shown below on Table 2.

Table 2: The Relationship Between the Duration of Documents Saved and Academic Titles

		At least 13 Years	8-12 years	4-7 years	0-3 years	Total
Prof.Dr.	f	2	-	-	-	2
	%	100,0	-	-	-	100,0
Assoc.Prof. Dr.	f	6	6	1	1	14
	%	42,9	42,9	7,1	7,1	100,0
Assist.Prof.Dr.	f	11	17	5	7	40
	%	27,5	42,5	12,5	17,5	100,0
TA. Msc.	f	-	4	2	3	9
	%	-	44,4	22,2	33,3	100,0
Res.Assist.	f	-	4	6	6	16
	%	-	25,0	37,5	37,5	100,0
Total	f	19	31	14	17	81

_____ % 23,5 38,3 17,3 21,0 100,0

The findings on the table reveal that there is a relationship between the files saved in computers and professional career or titles. Another result is that 38, 3 % of the academics save their files within the period of 8-12 years.

Findings

Mean values and standard deviation about to the whole and sub-dimensions of The Data Waste scale used in this research are shown below on Table 3.

Table 3: Means and standard deviations about the dimension of the scale

Dimension	Negligence	Obliviousness	Concern for Data Loss	Disruption	The Whole Scale
\bar{X}	2,37	2,76	3,94	3,05	2,98
sd	1,06	1,06	,880	1,01	,739

When examining mean values and standard deviation of the academics responses to the dimensions of the Data Waste scale, the highest mean is the dimension of concern for data lass (\bar{X} =3,94). Thus it can be said that the main reason for data loss is the concern for data loss.

Within the scope of the research, the responses were compared with Independent Samples t Test from the perspective of the variable “university”. The results are summarized on Table 4.

Table 4: The Comparison of the Opinions towards the Data Waste from the Perspective of The Variable “university employed”

	N	\bar{X}	Sd	Levene test		t test		
				F	Sig.	df	t	Sig.
Negligence								
Firat University	37	1,85	,75	7,157	,009*	79	-	-
Tunceli University	44	2,63	1,10					
Obliviousness								
Firat University	37	2,55	1,04	,091	,764	79	-1,283	,203
Tunceli University	44	2,87	1,06					
Concern for Data Loss								
Firat University	37	3,79	,89	,005	,945	79	-1,103	,274
Tunceli University	44	4,01	,86					
Disruption								
Firat University	37	2,50	,93	,084	,773	79	-3,695	,000*
Tunceli University	44	3,32	,94					
The Whole Scale								
Firat University	37	2,61	,57	4,149	,045*	79	-	-
Tunceli University	44	3,17	,74					

*<.05

When the opinions of academics about Data Waste scale in terms of the variable “university”, in the dimension of disruption, a significant difference was found on behalf of academics who work at the Tunceli University ($t(79)=4,149, p<.05$). The Levene test reveals that the distribution in the dimension of negligence and the whole scale is not homogenous. Therefore, the Mann Whitney U test was conducted. The results of the Mann Whitney U test indicate significant differences in the dimension of negligence ($U=430.500, p<.05$) and the whole scale ($U=417.500, p<.05$).

Another dimension of the research is whether the opinions of academics towards Data Waste scale differentiates or not, in the context of the gender perspective. The results of the Independent Samples t Test concerning this situation are shown in table 5.

Table 5: The Gender Perspective in Opinions of Academicians Towards the Dimensions of the Scale

	N	\bar{X}	Sd	Levene test		t test		
				F	Sig.	df	t	Sig.
Negligence								
Male	53	2,50	1,06	,142	,708	79	1,503	,137
Female	28	2,13	1,04					
Obliviousness								
Male	53	2,68	1,01	1,517	,222	79	-,976	,332
Female	28	2,92	1,15					
Concern for Data Loss								
Male	53	4,03	,90	1,165	,284	79	1,348	,181
Female	28	3,76	,81					
Disruption								
Male	53	3,18	,98	,471	,495	79	1,668	,099
Female	28	2,79	1,04					
The Whole Scale								
Male	53	3,05	,71	,001	,975	79	1,230	,222
Female	28	2,84	,77					

As the research findings indicate, opinions towards Data Waste Scale do not differentiate according to gender in any dimension.

The responses to the dimensions of scale were compared in the context of the variable “title”. With regard to this comparison, the Kruskal Wallis H Test results can be seen on table 6.

Table 6: The Comparison of the Opinions towards the Data Waste from the Perspective of The Variable “academic titles”

	(1: Prof.Dr., 2: Assoc Prof.Dr., 3: Assist. Prof.Dr., 4: TA/Expert 5: Res. Assist.				
	Negligence	Obliviousness	Concern for Data Loss	Disruption	The Whole Scale
X ²	7,980	6,744		4,708	17,800
Sig.	,092	,150		,319	,001*
Difference				2-5, 3-5	1-4, 1-5 2-4, 3-4

*<.05

The results from the Kruskal Wallis H Test reveals that significant difference were observed between the opinions of the research assistants, associate professors and assistant professors in terms of the dimension of disruption (X²=17.800, p<.05). In terms of the whole scale, significant differences were found between the opinions of professors, teaching assistants/experts and research assistants; between teaching assistants, associate professors and assistant professors (X²=11.148, p<.05).

Conclusions and Recommendations

The research findings demonstrate that academics use computers mostly for research and reading e-mails and newspapers. Furthermore, it was observed that academics mostly install programs of

word processors and data analysis, in addition to operating systems. It is found that academics back up their files frequently. A correlation between duration of their professional careers and creation dates of the files saved in computers.

When the means and standard deviation of the academics' responses to the dimensions of Data Waste scale are examined, the highest mean appears in the scale's dimension of concern for data loss. Therefore, the analysis revealed that the reason for data loss stems from the concern for data loss. When the opinions of academics about Data Waste scale in terms of the variable "university", in the dimension of disruption and negligence, a significant difference was found on behalf of academics who work at Tunceli University. This situation can be explained with the fact that, Firat University is an older institution with a less problematic structure in terms of technological facilities and academic culture.

Another finding of the research is that gender does not play a role in the dimension of data loss. No significance differences were observed in any dimension of Data Waste scale.

Finally, in the dimension of disruption on Data Waste scale, a significant difference of opinions was observed between research assistants, associate professors and assistant professors. Furthermore, significant difference of opinions was observed between professors, teaching assistants/experts and research assistants and between teaching assistants, associate professors and assistant professors. The common point of these differences in these two dimensions is that new titles result in more data waste. Therefore, it can be said that academics' attitude of backups gradually lead data losses. Another result comes from these findings is the necessity for an effective system of documentation and back up. Computer users should be informed on data backups, organization and particular attitudes that cause data loss. Data losses can be reduced by professional medias that are reinforced by advanced technology. These medias can also be useful to save previous works of academics that are considered as academic memory.

References

- Ansal, H. (2004). Geçmiş ve gelecekte ekonomik gelişmede teknolojinin rolü, *Teknoloji* (16-35). Türk Mühendis ve Mimar Odaları Birliği Yayınları, Ankara: Kozan Ofset. [In Turkish]
- Ataman, B. K.(2012). Elektronik ortamda bilginin arşivlenmesi. <http://www.beyaz.net/tr/arsiv/makaleler/bekir-kemal-ataman/elektronik-ortamdaki-bilginin-arsivlenmesi.html> [In Turkish]
- Aydın, C. & Özdemirci, F. (2011). Preservation of Integrity and Authenticity in the Archiving of Electronic Records. *Bilgi Dünyası*, 12(1), 105-127.
- Bruner, j. (2009). Eğitim süreci. (T. Öztürk, Ç.). Ankara: Pegem Akademi (Orijinal Çalışma Basım Tarihi 2003) [In Turkish]
- Ekiz, D. (2009). Scientific Research Methods. Ankara: Anı Publishing.
- Kabakçı, I. & Odabaşı, H.F. (2004). *Using the technology and being a technorealist. Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 1, 20-25.
- Karasar, N. (2009). Scientific Research Methods. Ankara: Nobel Publishing.
- Tonta, Y. (1996). Internet, Electronic Libraries, and Information Retrieval. *Türk Kütüphaneciliği*, 10(3): 215-230.
- Tuncer, M. (2012). The Development of Data Waste (D-Waste) Scale toward for Computer Users. *International Online Journal of Educational Sciences*, 4 (3), 727-737.