Analysis of Students' Online Information Searching Strategies, Exposure to Internet Information Pollution and Cognitive Absorption Levels Based on Various Variables

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ABSTRACT

The objective of the present study was to examine students' online information searching strategies, their cognitive absorption levels and the information pollution levels on the Internet based on different variables and to determine the correlation between these variables. The study was designed with the survey model, the study group included 198 students attending Computer Engineering and Computer Education and Instructional Technologies (CEIT) Departments in two universities located two cities in the Central Anatolian Region in 2016-2017 academic year fall semester. The data collection tools were Online Information Searching Strategy Inventory, Internet Information Pollution Scale and Cognitive Absorption Scale. In the study, it was found that the scores of the students related to these variables were above the average. It was also found in the study that there were low levels of positive correlations between the students' level of cognitive absorption and encountering information pollution on the Internet and online information searching strategies. Another finding was that male students' average score for online information searching strategies was higher than that of the female students. Furthermore, the common interaction between department and grade level variables based on the Internet information pollution scores was statistically significant.

Keywords: *Online information searching strategy, Internet information pollution, cognitive absorption, computer engineering, CEIT*

INTRODUCTION

Along with the advances in web technologies, the teaching-learning activities that are conducted on the Internet also rapidly diversify. As the Internet became a significant source for the teaching-learning process, learners' Internet skills are expanding to include information literacy skills such as access to information, acquisition, evaluation and utilization (Kabakçı, Fırat, İzmirli & Kuzu, 2010). The search for information and processing the acquired information is a complex cognitive process that requires learners to verify, evaluate, organize and synthesize information obtained from different sources (Walraven, Brand-Gruwel & Boshuizen, 2008).

When the magnitude and diversity of the information available on the Internet are considered, since issues such as the value, reliability, impartiality, currency and applicability of the presented or acquired information constitute a question mark for the individuals, it is necessary to evaluate the web sites with a critical approach (Geçer, 2014; Yolal & Kozak 2008). As a matter of fact, the increase in the number of web pages on the Internet, which includes about 1.5 billion (anahaber.gen.tr, 2016) web sites based on 2015 data, resulted in disorientation (Ahuja & Webster, 2001), information overload and decrease in the quality of available information (Tu, Shih & Tsai, 2008). This makes it difficult to search for information on the Internet and individuals often get lost and do not know where they will go, where they are, and what they will do

(Aşkar & Mazman, 2013). Previous studies have shown that individuals experience difficulties in customizing search terms, reasoning the search results, having a critical attitude towards the resource, and organizing the search process (Walraven, Brand-Gruwel & Boshhuizen, 2008; Tsai, 2009). This fact demonstrates the significance of information searching strategies that individuals use when trying to access information on online media.

Online Information Searching Strategy

Cognitive strategies are significant for easy and rapid access of individuals to accurate and reliable information, and conducting various cognitive processes such as analysis, evaluation and decision-making during the process of access to information. Especially, it is important for the students to decide on the adequacy, reliability and relative quality of the acquired information, as well as the search and access of information on the Internet that they use as a primary source of information for their homework, projects and presentations. Du and Evans (2011) investigated how academic users search for information for their real-life research tasks with 11 PhD students. Interaction with multiple search systems, exploration of popular search engines, use of basic search function, construction of multiple search queries, multi-tasking reformulation, parallel reformulation, and recurrent reformulation were the searching strategies discovered as a result of the study. In fact, in a study conducted with high school students, it was concluded that the students' awareness on the authenticity and reliability of the resources on the internet was inadequate (Esgin, Baba, Aytaç & Turan, 2011). Similarly, Lorenzen (2001) found that students used online environment as their primary source of information, however experienced problems in deciding whether the information they searched for and acquired was worth using in a study where the data was collected with interviews with high school students.

Hargittai (2012) studied the search for health information on the Internet via personal observations and interviews with a diverse group of 210 young adults about their experiences with looking for emergency contraception (EC) information on the Web. Results showed that one third of participants were unable to find any relevant information about EC and majority of the group could not identify the most efficient way to obtain EC in a time of need. It was stated that several individuals did not have necessary skills to navigate online content well with policy implications for educating people about informed and efficient Internet uses.

Wu and Tsai (2007), in a study they conducted to interpret the information searched on the Web and information searching strategies, collected data from 1220 students via the Web-based Information Search and Interpretation Strategies Scale developed by themselves and concluded that students' information search-interpretation strategies significantly differed based on gender and grade level. Based on the data collected from 472 students in a study conducted to analyze web-based information search behavior of students by Kurulgan and Argan (2007), gender, department and internet proficiency level had a significant effect on the information search behavior of the students. Tsai and Tsai (2003) analyzed 73 college freshmen students' information searching strategies in Web-based science learning activities of randomly selected eight subjects and examined the influence of students' Internet self-efficacy on these strategies. It was reported that students with high Internet self-efficacy had better information searching strategies and learned better than those with low Internet self-efficacy in a Web-based learning task. Since online searching strategies are complex cognitive skills, they are influenced by diverse factors as well as self-efficacy (Tu, Shih & Tsai, 2008). It could be argued that one of these factors is the information pollution on the Internet.

Information Pollution on the Internet

In parallel with the development and penetration of the Internet, it became increasingly difficult for users to cope with this medium, which is created with the mass of information uploaded, edited and shared all over the world. A user who wants to access information on a certain subject often is faced with a lot of irrelevant, false and unreliable information on the search topic (Fırat & Kurt, 2015). This led to the birth of the concept of information pollution on the Internet, which was called "infollution" by Power (2015). In the study conducted by Fırat and Kurt (2008), information pollution was defined by pre-service teachers as the presence of unnecessary, incorrect, out of date, unreliable, inconsistent, commercial information, which was not published by experts on the Internet in a disordered manner. As one of the consequences of information pollution on the Internet, Hope (2008) stated that responses to fear of pollution and interpretative problems might result in banning the educational use of Internet at schools. Another disadvantage of information pollution on the Internet is the loss of time. As a matter of fact, time is one of the factors that explains cognitive absorption. This situation is expressed by the perception that we spend more than planned time or the perception that the time passes more rapidly when dealing with technologies (Koçak-Usluel & Kurt-Vural, 2009). Information pollution on the Internet could cause the individual to spend too much time while searching for accurate and reliable information, at least more than originally planned.

Cognitive Absorption

Cognitive absorption defined as "the condition of intense dependency on technological experiences" (Agarwal & Karahanna, 2000) and was explained by five elements: time, curiosity, focus of interest, pleasure and control (Koçak-Usluel & Kurt-Vural, 2009). The focus of interest is the condition where the attention is focused on the activity when interacting with technologies. However, Leong (2011) investigated the relationships between social presence, cognitive absorption, interest, and student satisfaction in online learning, and found no significant correlation between interest and cognitive absorption of the students. One of the sub-dimensions of the measurement tool, curiosity is the inquisitiveness of the individual while interacting with the technology, pleasure is the condition where the individual enjoys the interaction with the technology. Another sub-dimension of the measurement tool, time is the individual's perception that the time runs more rapidly or the individual had spent more time than planned when interacting with technology, while control is the perception of the individual (Koçak-Usluel & Kurt-Vural, 2009). Agarwal and Karahanna (2000) described cognitive absorption on a multidimensional (temporal dissociation, focused immersion, heightened enjoyment, control, and curiosity) construct with software involvement resulting in two important beliefs about technology use; perceived usefulness and perceived ease of use. It is proposed that the personal traits of playfulness and personal innovation are important determinants of cognitive absorption. Lin (2009) argued that cognitive absorption significantly affects behavioural intention through perceived usefulness and perceived ease of use of the virtual community. Both the perception of being in control when dealing with technologies and spending more time on the Internet due to Internet pollution could be related both to information pollution on the Internet and online information searching strategies.

Thus, the aim of the present study is to investigate students' online information searching strategies, cognitive absorption levels and Internet information pollution levels based on different variables and to determine the correlations between these three variables. Based on the abovementioned general objective, the following research questions were identified.

1. How the students' online information searching strategies, encountering information pollution on the Internet and cognitive absorption levels are distributed?

2. Is there a correlation between students' online information searching strategies, encountering information pollution on the Internet and cognitive absorption levels and their

a. GPA?

b. time spent on the Internet?

c. frequency to connect to the Internet?

Do the students' online information searching strategies, encountering information pollution on the Internet and cognitive absorption levels significantly differ based on the common effect of the variables of

a. gender?

b. department?

c. grade level?

METHOD

This section includes information on the research model, study group, data collection tools, and data analysis.

Research Model

The present study utilized the survey model, one of the quantitative research designs. Survey models aim to determine the attitudes, views, behavior, or characteristics of individuals (Cresswell, 2012).

Study Group

The study group included 198 students attending Computer Engineering and Computer and Instructional Technologies (CEIT) Departments of two universities located in two cities in the Central Anatolia Region during 2016-2017 academic year fall semester. However, since six of the students in the study group did not provide all information required in the data collection tools, these participants were excluded from the study and analyses were conducted with the data obtained from 192 students. Demographics of the study group is presented in Table 1.

Table 1. Demographics of the participants

Variable	f	%	Variable	f	%
Gender	192	100	Daily time spent on Internet	192	100
Female	85	44,3	1-2 hours	24	12.5
Male	107	55,7	3-4 hours	62	32.3
Department	192	100	5-6 hours	43	22.4
Computer Engineering	104	54.2	7-8 hours	23	12
CEIT	88	45.8	9-10 hours	16	8.3
Grade	186	100	11 hours or more	24	12.5
Junior	134	69.8	Frequency of Internet use	192	100
Senior	52	27.1	Once a day	17	8.9
GPA	125	100	A few times a day	164	85.4
1-1.99	39	31.2	Once a week	4	2.1
2-2.99	70	56	A few times a week	7	3.6
3-3.99	16	12.8			

Table 1 demonstrates that 85 students who participated in the survey were female (44.3%) and 107 were male (55.6%). 104 participants were computer engineering students (54.2%), and 88 (45.8%) were CEIT department students, 134 (69.8%) were junior students and 52 (27.1%) were senior students. It was observed that more than half (56%) of the participants who reported a GPA had GPAs between 2-2.99, and that one third (32.3%) spent between 3-4 hours on the Internet per day. Furthermore, the majority (85.4%) of the students searched the Internet for information several times a day.

Data Collection Tools

Online Information Searching Strategy Inventory (OISSI)

"Online Information Searching Strategy Inventory" developed by Tsai (2009) and adapted to Turkish by Aşkar and Mazman (2013) was used to determine the online information searching strategies of the students. The Cronbach Alpha reliability coefficient of the scale 0.91 that includes 25 items and 7 factors, namely, "disorientation, evaluation, purposeful thinking, select main ideas, trial and error, control and problem solving". In the present study, the scale Cronbach α coefficient was calculated as .88. Since in the scale that was developed as a 6-point Likert type scale, the total score is calculated by the sum of the scores obtained from each item, the lowest possible score is 25 and the highest possible score is 150. A high score indicates an advanced online information searching strategy. A high mean score on a sub-factor indicates that the strategy for that factor is advanced.

Internet Information Pollution Scale (IIPS)

"Internet Information Pollution Scale " developed by Fırat and Kurt (2015) was used to measure the level of information pollution that students encountered while trying to access information on the Internet. The 5-point Likert-type 20-item scale includes two sub-factors; "problems originating from the environment" and "problems originating from the individual". Cronbach's alpha internal consistency coefficient of the scale is .88. In the present study, the Cronbach α coefficient was calculated as .90. The lowest possible score in the scale is 20, and the highest possible score is 100.

Cognitive Absorption Scale (CAS)

"Cognitive Absorption Scale," developed by Agarwal and Karahanna (2000) and adapted to Turkish by Koçak-Usluel and Kurt-Vural (2009) was used to measure the cognitive absorption levels of the students. The 17-item scale includes four sub-factors, "time, curiosity, focus of interest and pleasure". The Cronbach alpha internal consistency coefficient of the scale is .92. The Cronbach α coefficient was measured the same also in this study. The lowest possible score that could be obtained in the 10-point Likert-type scale is 17, and the highest possible score is 170.

Data Analysis

Consistent with the objective of the study, the data collected with data collection tools were initially simplified by eliminating the incomplete forms and forms with extreme and outlier values. Then, the normal distribution of the total scores obtained with the data collection tools and calculated for each student was tested to utilize the parametric tests. According to Huck (2012), the skewness and kurtosis values must be between -1 and +1 to claim normal distribution of the data. It was observed that the scores obtained in all data collection tools confirmed the assumption of normal distribution (OISSI skewness = -.532, kurtosis = .985, IIPS skewness = -. 398, kurtosis = .315, CAS skewness = -.190, kurtosis=189).

To reach the sub-objectives of the study, correlation analysis was used to determine the correlation between the variables and a two-way analysis of variance was used to determine the effect of the common interactions of the independent variables on the dependent variables.

FINDINGS

In the study, initially, the distribution of the students based on online searching strategies, the information pollution on the Internet and cognitive absorption variables was examined. Descriptive statistics on the variables mentioned above based on the data obtained from the students are given in Table 2.

Table 2. Descriptive statistics on data collection tools

Measurement Tools	n	$\bar{x}$	sd
Online Information Searching Strategy Inventory (OISSI)	192	3.95	0.71
Disorientation		2.30	1.21
Evaluation		4.12	1.08
Purposeful Thinking		4.14	1.03
Trial and Error		3.17	3.15
Select Main Ideas		3.32	0.78
Control		4.53	1.06
Problem Solving		4.07	0.96
Internet Information Pollution Scale (IIPS)	192	3.17	0.76
Environmental Characteristics		3.44	0.81

Measurement Tools	n	x̄	sd
Individual Characteristics		2.83	0.95
Cognitive Absorption Scale (CAS)	192	7.08	1.51
Time		6.94	2.19
Curiosity		7.38	1.84
Focus of Interest		6.31	1.99
Pleasure		7.72	1.76

The average student score in OISSI was 3.95, which was above the average of 3.5 in the study. Students received the highest mean score in the control dimension in this instrument (x̄=4.53). This was followed by purposeful thinking and evaluation sub-dimensions, respectively. The mean student score in IIPS was 3.17, which was higher than the mean score 2.5 in the study. Similarly, the mean student score in CAS was 7.08, well above the average 5.5, which is the possible mean score in the scale. The students received the highest scores in the "pleasure" dimension in this instrument (x̄ = 7.72).

The Spearman correlation coefficient was used to determine the correlation between the students' online information searching strategies, the level of information pollution and cognitive absorption and grade point averages, the time they spent daily on the Internet, and the frequency of their Internet use. Analysis results are given in Table 3.

Table 3. Correlation analysis findings

n=129	GPA	Daily Time Spent on Internet	Frequency of Internet Use	Cognitive Absorption	Internet Information Pollution	Online Information Searching Strategies
GPA	-	-.029	.008	-.010	.136	.126
Daily Time Spent on Internet		-	.015	.219**	-.179*	.032
Frequency of Internet Use			-	-.021	-.044	.014
Cognitive Absorption				-	.160*	.391**
Internet Information Pollution					-	.249*
Online Information Searching Strategies						-

As shown in Table 3, there was a low level significant positive correlation between the time spent on the Internet daily and cognitive absorption (r = .219, p <.01) and a low level significant negative correlation with information pollution on the Internet (r = -. 179, p <.05). There was a low level significant and positive correlation between cognitive absorption and information pollution on the Internet (r = 160, p <.05). There was a low level significant positive correlation between online information searching strategies and cognitive absorption (r = .391, p <.01), and a low level significant and positive correlation with Internet information pollution (r = .249, p <.05).

Two-way analysis of variance was used to determine whether the students' online information searching strategies, their encounter with information pollution on the Internet, and cognitive absorption levels differed significantly based on gender, department and grade level variables. The results for each dependent variable were tabulated separately. The ANOVA results for scores on online information searching strategies for students based on department, grade level and gender variables are presented in Table 4.

Table 4. ANOVA results on students' online information searching strategy scores based on department, gender and grade level

Variable	Sum of Squares	df	Mean Squares	F	p
Department	528.427	1	528.427	1.780	.184
Grade Level	957.058	1	957.058	3.224	.074
Gender	1383.209	1	1383.209	4.660	.032
Department*Grade Level	192.206	1	192.206	.647	.422
Department*Gender	679.376	1	679.376	2.289	.132
Grade Level*Gender	318.068	1	318.068	1.071	.302
Department*Grade Level*Gender	93.034	1	93.034	.313	.576
Error	52838.264	178	296.844		
Total	1881462.978	186			

The interaction effect of department, grade level, and gender variables on students' online information searching strategy scores was not statistically significant ($F_{(1,178)}$=.313, p>.05). Furthermore, the interaction effects between the independent variables (grade level *gender, department*gender, department * grade level) were also not statistically significant. However, online information searching strategy scores differed based on gender ($F_{(1,178)}$=.032, p<.05). The difference favored male students. In other words, the mean online information searching strategy score of male students ($\bar{x}$ = 100.7) was higher than the mean online information searching strategy score of female students ($\bar{x}$ = 93.21).

The ANOVA results for the students' encounter with the information pollution on the Internet scores based on department, gender and grade level are presented in Table 5.

Table 5. ANOVA results for the students' encounter with the information pollution on the internet scores based on department, gender and grade level

Variable	Sum of Squares	df	Mean Squares	F	p
Department	.728	1	.728	.003	.955
Grade Level	377.751	1	377.751	1.669	.198
Gender	.423	1	.423	.002	.966
Department*Grade Level	1296.071	1	1296.071	5.725	.018
Department*Gender	117.998	1	117.998	.521	.471
Grade Level*Gender	45.748	1	45.748	.202	.654
Department*Grade Level*Gender	6.868	1	6.868	.030	.862
Error	40293.986	178	226.371		
Total	784824.744	186			

The interaction effect of department, grade level, and gender variables and students' scores on encounter with the information pollution on the Internet was not statistically significant ($F_{(1,178)}$=.030, p>.05). However, the interaction effect of department and grade level variables was significant ($F_{(1,178)}$=.521, p<.05). Descriptive statistics on information pollution on the Internet scores based on grade level and department variables are given in Table 6.

Table 6. Descriptive statistics on information pollution on the Internet scores based on grade level and department variables

Department	Grade Level	x̄	sd
CEIT	3	67.411	1.799
	4	56.250	4.758
Computer Engineering	3	59.991	1.881
	4	63.326	2.700

Based on the table, CEIT junior students' level of encountering information pollution on the Internet (x̄ = 67.41) was higher than that of the senior students in CEIT department and the juniors and seniors in Computer Engineering Department.

ANOVA results for cognitive absorbance scores of the students based on department, gender and grade level are given in Table 7.

Table 7. ANOVA results for cognitive absorption scores of the students based on department, gender and grade level

Variable	Sum of Squares	df	Mean Squares	F	p
Department	2.459	1	2.459	.004	.951
Grade Level	131.608	1	131.608	.199	.656
Gender	792.681	1	792.681	1.198	.275
Department*Grade Level	1276.179	1	1276.179	1.929	.167
Department*Gender	.002	1	.002	.000	.999
Grade Level*Gender	311.597	1	311.597	.471	.493
Department*Grade Level*Gender	641.875	1	641.875	.970	.326
Error	117756.143	178	661.551		
Total	2798512.608	186			

The interaction effect of department, grade level and gender variables on cognitive absorption scores of students was not significant ($F_{(1,178)}$=.970, p>.05). Furthermore, the interaction effect of the independent variables (grade level*gender, department*gender, department*grade level) and individual effects were not significant.

DISCUSSION AND CONCLUSIONS

In the study conducted with 192 CEIT and Computer Engineering students, the online information searching strategy scores of the students were found to be above the average value of 75. Students received the highest scores in Online Information Searching Strategy Inventory in the "control" sub-dimension. The fact that the average score for the control strategy was high indicated that the participants could effectively navigate the searches because the control sub-dimension includes the skills necessary to manipulate search applications on the Internet. In other words, connecting using URLs, using different web browsers, and knowing advanced search options. It is believed that the fact that participating students were computer engineering candidates and students in the CEIT department was the reason behind this finding. As a matter of fact, students exposed to content through which they could acquire these skills in different courses available in the curricula.

The students' Internet information pollution scale scores were above the average value of 50. The students who participated in the study indicated that encountering information pollution on the Internet was mostly just a characteristic of the medium. Students might encounter unnecessary, false, incomplete, advertising information on the Internet. In other words, students are confronted with information pollution originating from the environment rather than themselves. Today, it is increasingly difficult to choose the right information among the hordes of information available on the Web as the individuals become more producers than mere consumers. Today, the concept of trolling, in other words, consciously dissociative or aggressive behavior during the communication process using computers (Mercimek, Dulkadir-Yaman, Kelek & Odabaşı, 2016), is prominent, making it difficult for the individuals to reach the accurate information in Internet environment.

The students' cognitive absorption scale scores were above the average value as the other two scoring instruments. The students received the highest scores in the subscale of "pleasure" in the cognitive absorption scale. The pleasure dimension is related to the joy of interacting with technology, enjoying the pieces of technology and technology being an object of affection by itself. In other words, students enjoyed spending time with technology. This dimension was followed by the "curiosity" dimension. According to this dimension, while students spend time with technology, they have a more curious approach in their cognitive and emotional experiences and experience an emotional pleasure and joy. In other words, while students spend time with technology, the feelings of pleasure and curiosity are triggered. In a study conducted by Çuhadar (2013), these two dimensions are found to be the dimensions with the highest mean scores. This finding could also be due to the knowledge of the participant group included the content knowledge in the field of technology. Time, which is one of the sub-dimensions of cognitive absorption, is the state where one loses the count of time while interacting with technologies. In other words, when one is dealing with technology, one spends more time than planned or the time passes rapidly (Koçak-Usluel & Kurt-Vural, 2009). This is considered to be due to the fact that students could not use online information searching strategies efficiently and that they are exposed to information pollution on the Internet. As a matter of fact, there was a positive but low level significant correlation between the duration of daily Internet access time and cognitive absorption in the study ($r = .219$, $p < .01$). However, there was a negative but low level significant correlation between the duration of daily Internet access and information pollution on the Internet ($r = -.179$, $p < .05$). In other words, as the time the students accessed the Internet daily increased, exposure to Internet information pollution decreased. It is considered that this was due to the fact that the students were able to access the right information and spent more time on this information. In fact, in a study by Cevik (2015) conducted with college students, it was reported that web search experience was one of the best predictors of online information searching strategies.

In the study, low level significant and positive correlations were determined between students' cognitive absorption levels ($r = .329$, $p < .01$) and levels of exposure to Internet information pollution ($r = .166$, $p < .05$) and online information searching strategies. In other words, as students utilized online information searching strategies, their cognitive absorption levels increased. This could be explained by the fact that the students were searching for new information on the Web due to their curiosity, one of the sub-dimensions of cognitive absorption, even though they were target-oriented while browsing the Internet. Although the increase in use of online information strategies, as the level of exposure to Internet information pollution increases was not expected finding, it could be explained by the fact that individuals could be exposed to inaccurate and irrelevant information as explained in a study conducted by Kabakçı et al. (2010), where the authors analysed the views of 21 elementary school teachers about Internet searching strategies with the qualitative method of survey research. The findings revealed that internet searching strategies implemented by teachers differed between the inception and the development processes of the search. It was also stated that teachers experienced several problems such as irrelevant information, accessing insufficient information, accessing websites with virus threats while searching. One reason for this could be the fact that information is shared by everyone on the Internet and there is little control over it. As a matter of fact, in a study by Wang (2016), it was found that the teachers tended to believe that Internet contains certain and detailed specific information, and the online information should be justified.

In the study, it was found that the interaction effects of the department, grade level and gender variables on the students' online information searching strategy scores, and the paired interactions between the independent variables were no significant. However, based on gender, online information searching strategies scores differentiated. In other words, male students' mean online information searching strategies scores were found to be higher than that of the female students. This result might be due to the fact that the students who participated in the study were not equally distributed based on gender and more than half of the students that participated in the study were computer engineering students, and the technical knowledge of these students was higher than that of CEIT students. The findings by Ay & Seferoglu (2017), Li & Kirkup (2007), Tsai (2009), Tsai, Liang, Hou and Tsai (2012) were consistent with this finding. On the other hand, the results of the studies conducted by Sırakaya & Çakır (2014), Turan, Reisoğlu, Özçelik & Göktaş (2015) differed from the finding obtained in the present study. These different results could be related to the samples and data collection tools.

In the present study, the interaction effect of the department, grade level and gender variables did not have a significant impact on the Internet information pollution scores of the students, while the interaction effect of department and grade level variables had a statistically significant impact. In other words, the level of the CEIT department junior students in exposure to Internet information pollution was higher than that of the CEIT department seniors and junior and senior Computer Engineering students. This could be explained by the fact that junior students were less experienced than senior students. In fact, Fırat & Kurt (2015) concluded that CEIT department students were less affected by Internet information pollution when compared to preschool teaching students, and explained this finding with the higher experience of CEIT students in technology use. Furthermore, this finding could be explained by the fact that CEIT department students had lower level field knowledge compared to computer engineering department students based on the differences in the content of the related curricula.

In the study, although the students exhibited over the average levels in the use of online information searching strategies, encountering Internet information pollution and cognitive absorption, the students could be informed about the scrutinized variables. Exposure to Internet information pollution and cognitive absorption levels of students who use and do not use effective online searching strategies could be investigated. Especially, it could be argued that the prevalence of social media use is effective in the students' cognitive absorption levels. Qualitative research on the causes of cognitive absorption could be designed in this context. It is also possible to investigate what the students in the sample group, who will be future role models for technology use, could do about Internet information pollution. Furthermore, similar studies could be designed with different sample groups.

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