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A Study on the Critical Perspectives of Graduate Students on e-Knowledge Sources

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Abstract

Internet and electronic databases today offer the opportunity to reach an unlimited amount of information in a short time. Owing to this advantage, the Internet has become an important provider of 'e-knowledge' and a basic tool in the process of research. It is essential that research undertaken by academic students on the internet should not ignore the critical approach. Therefore, this qualitative case study aimed to examine the attitudes of graduate students in Turkey towards the sources of 'e-knowledge' in the framework of critical thinking. The data collection techniques included focus groups and interviews. The study was undertaken with 23 volunteer graduate students from a Faculty of Education. In order to reveal the general theme and its pattern, the data were analyzed by both content analysis and descriptive analysis. The results showed that the students mostly used the internet as a source of knowledge for their assignments and research. The most prominent reasons for this included the need to use time efficiently and the mass of information that the internet offers. Most of the participants reported to follow critical criteria, such as testing the accuracy of information and reliability of sources.

Key Words

Critical Pedagogy, Critical Thinking, Knowledge, e-Knowledge, Internet.

This study is based on the argument that 'university students, and particularly graduate students, are expected to be mindful, selective, and critical about the knowledge they gain during the process of research and learning'. Parallel to the theory of critical pedagogy, this argument treats the obligation of universities to consider the epistemological attitude that comes from their intellectual background during the process of education as academic responsibility and 'knowledge ethics'. Academic responsibility and knowledge ethics can also be evaluated as the warranty of free thought (Trifonas, 2009).

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University, 'Knowledge' and Critical Thinking in the Context of Critical Pedagogy

According to critical theorists, "pedagogy is a critical practice" (Peters, 2006, p. 21). At all academic levels, it is essential that students prepare themselves for life as questioning, critical and active citizens that can stand up against existing power relations. According to Giroux (2008), such a stance aims to "protect schools and other pedagogy areas from the fatal effects of a market mentality so that students can take risks necessary to create an essential democracy" (p. 19). According to Bourdieu (1999), real democracy and education is not possible without a real critical approach. Noble (2001) contends that restructuring higher education under the pressures of electronic technologies and the inclination towards distance education serve to resign academy to commercial worries via online learning, e-knowledge, pedagogical models and meth-

ods. This approach also determines the rewards of knowledge and research styles by minimizing costs (Giroux, 2002). The main criticism is that "as market ideals take precedence over democratic values, the university is increasingly being transformed into a training ground for the corporate workforce" (Giroux, 2006, p. 68).

Critical Thinking, e-Knowledge and the Internet

The concept of 'rationality' has always been treated in the Western intellectual tradition together with the concepts of freedom and autonomy. Considered as rational beings from antiquity to the Enlightenment, human beings have been thought to have autnomy and originality parallel to their rationality (Cuypers, 2004). Critical thinking has thus become important as a rational human attitude. Ennis (1985) defines critical thinking as reflective and logical thinking used in the process of deciding what to do or what to believe. Beyer (1988), on the other hand, defines it as a clear, consistent and objective analysis of the accuracy, validity or value of a claim, source or judgment. Chance (1986) defines it as the ability to analyze concepts, produce and organize thoughts, defend views, make comparisons, make inferences, evaluate discussions and solve problems. Genel overall, critical thinking is the correct assessment of statements in a sentence (Ennis, 1996). In short, critical thinking is a disciplened and self-controlled way of thinking (Paul & Elder, 2002). In all definitions of the concept, the focus is on knowing what to do and believe, being aware, understanding, and decision making skills as a thinking skill. Even though these basic characteristics are mentioned in newer resources, their roots date back to Dewey's 1909 definition (Fisher, 2001).

Regardless of the approach used to define critical thinking, in the last analysis, it should offer tools of reaching the truth that directly reflects reality. These tools should be based on solving and judging the aims, assumptions, underlying knowledge, perspectives, concepts and thought patterns of a given situation, event or piece of knowledge, as stated by Paul and Elder (2010). This approach towards educational processes should ensure the universality of the process, especially in knowledge and its instruction areas. Seen from this perspective, "the concept of critical thinking comes to one's mind as a defining concept that explains the Western university. It is assumed that universities develop personal traits such as making judgments or evaluating a situation" (Metz, 2009, p. 180). In addition, "it is still a widespread covert belief that universities improve students' critical attitudes. Even employers expect graduates to have critical skills" (Phillips & Bond, 2004, p. 23). The concept of information in the expression "information age" which is often mentioned by critical thinkers "is used to underline the huge role that it plays in economic and cultural life" (Fuller, 2005, p. 459). "Computer technologies are to information age, what the machine was to the industrial revolution" (Kumar, 2005). This is an age when the new 'cognitive ecology' reveals its own truths, nature and values (Robins & Webster, 2002). Toffler (1990, p. 312) states that what is important today is not the accuracy of information but the 'flow and speed of information and concepts'. Toffler's 'future' approach overlaps with the "Computopia" theory, which is a utopia about the information age of the 21st century (Kumar). This is the utopia of development and information based technology. From the view of critical pedagogy, this is an extension of the dangers of the technology that the scientific and progressive understanding of the 20th century has reached, such as technologizing individuals, massification, and totalization (Stone, 2006).

One of the earlier people who emphasized this risk in academic contexts, Rothenberg (1997) treated critical thinking as an approach towards any thesis and antithesis in the academic arena, thereby asking the question "why should we not extend this attitude to cover the internet and the information sources based on it?" (p. 1).

Even though research results which claim that the internet and web based education applications increase critical thinking and problem solving skills in market based liberal education practices (Thompson, Martin, Richards, & Branson, 2003) abound in the literature, there are also opposing views from the perspective of critical pedagogy that the internet does not bring enough academic quality to university students in the process of reaching knowledge and learning, and that the internet has become an knowledge source that serves the creation of the existing dominant structure and prevents social critique (Selwyn, 2007).

Despite all this, the internet is increasing its influence and dominance in every walk of life, including education and instructional processes. Previous research on this topic has investigated its different aspects. To illustrate, Jagboro (2003) found that approximately 38.24% of the students they studied used the internet on a daily basis; 53.42% used it to reach research materials; and 39.73% used it to reach course materials. Anderson (2001) concluded

that 54% of students used internet-based knowledge in their academic research. Jebreen and Al-Karaki (2008) showed that the majority of the university students they studied (62.4%) perceived the internet as an effective academic learning framework. Kubey, Lavin, and Barrows (2001) explored internet use and its relations with academic success, and concluded that it affected success negatively. Another study involving different age groups found that participants generally used internet sources for their assignments but print resources for their scientific academic work (Xie & Joo, 2009). Another study investigated the link between internet use at schools and academic success, and found no positive relationship between the two (Durán, 2002). On the other hand, another study concluded that the internet gave students an opportunity for faster research (Anderson; Braten, Stromso, & Samuelstuen, 2005; Browne, Freeman, & Williamson, 2000; Durán; Kirkwood & Price, 2005; Selwyn, 2007).

The main problems and characteristics of internet based research and knowledge gathering process in the world are also true for Turkish educational contexts. Certain previous studies found that university students used the internet to help with assignments and gather information (Güney, Bağlı, Şener & Çok, 2007), scan information and learn (Ercan & Çok, 2007), reach information (Akkoyunlu & Yılmaz, 2005). In addition, it has been stated that they use the internet mostly for *academic purposes* (Gürol, 2010) such as "educational research and article reading" (Tekinarslan, 2009, p. 8).

Other studies investigated the internet as an effective information source (Gunga & Ricketts, 2008; Halverson, 1997; Jones, Johnson-Yale, Millermaier, & Pérez, 2008; Lynch, Vernon, & Smith, 2001; Scherer, 1997) but did not explore it in the context of critical thinking. Therefore, the motivation for the present study was an analysis of the aims and reasons for using the internet as an knowledge source by graduate students in a critical and academic framework.

Purpose

Today, the availability of a mass of information on the internet and the need for critical viewing of sources owing to academic responsibility presents a serious problem in academic processes. The study thus aims to explore the critical thinking approaches of graduate students in Turkey when using the internet to search for knowledge.

Method

Research Design

This is a qualitative case study. The case study approach aims to reveal "how and why a given problem or concept is formed" (Yin, 2003, p. 7). Thus, the study mainly aims to explain and evaluate the 'how' and 'why' of the epistemological approach frequently used by graduate students in their assignments and research.

Universe and Sampling

The participant group in the study was selected by using purposeful sampling. The study group was selected by the homogeneous sampling method so as to explore the views of a specific group. The homogeneous sampling method provides efficient data through focus group interviews and open-ended interview questions about the views of a specified group (Patton, 2002; Yıldırım & Şimşek, 2005). The participants were graduate students who were doing their degrees in the faculty of education of two state universities, one of which is located in the capital city and the other is in the western Black Sea region of Turkey. A total of 23 students including 16 males and 7 females participated in the study.

Instrument

The data collection methods used in the study were *focus group interviews* and *the interview technique*. Interviews used a form with four open-ended questions. In order to identify the four questions to be used in the study and establish the dimensions to be studied, the first stage was to hold *focus group interviews*. The focus group interviews were conducted with a total of 10 participants, five academics and five graduate students from the Department of Educational Sciences. As a result of these interviews and expert opinions, four questions were written to be included in the interview form: *(i) Do you see the internet as a source of knowledge for your assignments and research? Why?; (ii) How do you analyze the knowledge you find on the internet? Which details do you focus on?; (iii) What characteristics do you seek in the websites that you use for your assignments and research?; (iv) Do you doubt the value and accuracy of the knowledge you reach on the internet when you use it for your assignments and research? Why?*

For internal consistency of the study, whether "the participants found the findings realistic" (Yıldırım & Şimşek, 2005, p. 257) was tested. For reliability, the expert examination strategy recommended by

Miles and Huberman (1994) was followed. In accordance with this strategy, the theoretical framework, research design, data collection, analysis and interpretation stages of the study were discussed with an expert working at the same department as the researcher and a second expert from another university, and their feedback was received. This provided the researcher with alternative perspectives and an awareness of aspects not related to data (Daymon & Holloway, 2003).

Process

The data obtained in the study were analyzed through both qualitative content analysis and descriptive analysis. For content analysis, the data obtained were divided into certain categories under common concepts (Yıldırım & Şimşek, 2005) and evaluated. Content analysis, which was the method of data analysis employed in the study, was preferred to explain the data gathered and reach some concepts (Strauss & Corbin, 1998). Sometimes it is possible for researchers to "evaluate the natural language used by participants down to the last word in the sentences" (Tesch, 1990, p. 193). Coding was completed by gathering participants' thoughts under certain main concepts (categories). It was undertaken conceptually by choosing common concepts from participants' statements. In order to ensure reliability while grouping opinions, the agreement percentage between the analyses of experts was calculated, as was the case when grouping the research questions.

Results

The responses given by all participants to the questions in the first part of the study are presented as they are. Responses to the second part have been divided into four main categories. When the students were asked *'How often do you use the internet?'*, only 5 out of the 23 participants replied 'once or twice a week', while 18 replied 'everyday'. Fifteen participants responded to the question '*How often do you use the internet for your assignments and research?'* by saying 'always' and 6 answered by saying 'mostly'. The statements in this section are clustered as follows: *(i) I use articles, articles from indexed and refereed journals, theses, newspapers, e-books and dictionaries (16); (ii) I use journal and book sites, e-journals, e-libraries (8); (iii)I use university databases for scientific articles (8).*

The findings and categories pertaining to the responses given to the questions in the second part were as follows:

First Category: Reaching a lot of knowledge in a short time: The responses of participants to the first question revealed a consensus that they used the internet as a 'source of knowledge'. The responses were as follows: *(i) Yes, because it enables me to reach many articles, journals, theses, and papers in a short time (13); (ii) I see the internet as a source of knowledge (12); (iii) Yes, but not always or for every topic, I don't always see it as a source of knowledge (6); (iv) I use it as a source for knowledge I must reach in a limited time (6); (v) Yes, but I prefer online university databases for scientific articles (5).*

Second Category: Problems of reliability in the knowledge reached: Most statements were as follows: *(i) I make sure that the original source of the knowledge is cited and it has scientific respectability (9); (ii)I pay attention to the author (8); (iii) I don't use subjective materials other than articles published under the supervision of academic boards (4); (iv) I prefer scientific studies (4); (v) I don't use any assignment sites (4).* Almost all of the participants stated in their responses to this question that they critically analyzed the knowledge they find on the net in different ways. However, as can be understood from the statements, the participants did not analyze the content of the 'knowledge' they found on the internet; instead, they thought that scrutinizing the original source and the author, and paying attention to academic respectability was enough.

Third Category: *Characteristics of the source of knowledge:* Responses to the question asked in relation to the third sub problem were divided into two main categories according to student statements about the characteristics of the websites that they used: *(i) Continuity and being up-to-date; (ii) The level of the editor and purpose*. When they stated that they used the internet as a source of knowledge or at least as a tool for becoming informed, the general concern was that the website is 'up-to-date and continuous', 'open to communication' and 'the level of editors'. Continuity and being up-to-date can be taken as 'accountability'. At the same time, having an editor and respectability in the field were important. Thinking that characteristics such as the 'academic level of authors', 'having a website editor' and 'the scientific respectability of the institution' were adequate shows that the participants used their critical mechanism in this way.

Fourth Category: The need for value and confirmation of knowledge: Regarding the value and accuracy of the knowledge on the internet, the students expressed doubts with the following points: websites

having 'prejudice', 'errors', 'ideological manipulation', 'sidetracking'. Responses to this question may be evaluated under one single main category. The students generally used the internet as an important tool in the knowledge-gathering process. However, it is worth noting in relation to the critical approach that they mentioned having doubts and "persistent question marks" as they used this mass of information, as a reflection of graduate education.

Discussion

As stated in the first part of the study, it is certain that the internet offers advantages to researching students. It seems that using the internet for academic purposes facilitates research for students. When the findings of the study are evaluated in relation to the categories, it is noteworthy that students mostly rely on the internet for their assignments and research. It is evident that, despite voicing doubts about the information reached on the internet, the students could not refrain from using it at the same time. What makes the internet so is the ease it offers in reaching information. The statements of the participants and the findings of previous studies (Clyde & Anita, 2006) corroborate this claim by showing that the internet "eases access to information, is not bound by time, can be reached anytime, and is interactive".

The approach that resulted from the responses to the first question, "predominantly seeing the internet as a source of knowledge", carries the risk of misperceptions and thus turning into an uncritical tool and process if necessary care is not taken. This might make the internet no longer a 'tool of research' but a 'source of knowledge'. Responses to the second question emphasized the following concepts: 'Having a list of references', 'having an author', 'having gone through academic supervision' and 'being scientific'. In addition, approaches such as doubting assignments sites, scrutinizing websites, not accepting everything as correct, and taking note of references and original sources emerge as important attitudes. Responses to the third question included: having up-to-date websites, continuity, editor control, the academic background of the publisher, opportunities for communication, allowing discussions and e-mail questions, among others. It is important that the participants stated that they scrutinized all data offered on the internet as 'knowledge' and voiced their sensitivity about this. In response to the fourth question, the participants expressed persistent doubt about the epistemological value and accuracy of knowledge they borrow from the internet. On the other hand, they also voiced their concerns about websites being 'prejudiced', 'erroneous', 'ideological', 'manipulative', and 'sidetracking'. With a noteworthy and expected critical attitude, graduate students stated among the reasons for their doubts that different interpretations, subjective views and certain purposes may be possible. As stated by Stapleton, Helm-Park, and Radia (2006), many university students use religious and political/ideological websites, as well. These sources are often free and include ideological and undisputed masses of knowledge which "may not be objective and can be openly manipulative" (p. 74). The latent and unclear ideological agenda of these websites may be understood by analyzing their "Mission" and "About Us" sections, visuals and other textual elements" (p. 74).

Owing to the privileged position of the internet in our day, as a source of information especially in graduate education, it is without alternatives. Even though graduate students may largely possess a critical attitude, the need for a consistent critical perspective is obvious. This may be provided through theoretical and practical graduate courses on critical thinking, questioning, comprehension, evaluation and analysis skills. As graduate students use the internet during the process of research for the benefits of 'speed and accessibility', they need to take precautions to refrain from doing assignments and research based on a collage of data that have not been logically considered, proven true, and interrelated. It should be remembered that, rather than a 'product-centered/result-oriented' and 'benefit-driven' educational approach, what is really needed is approaches that emphasize "individuals who have the ability to 'grasp and comprehend' what they know and do" (Kaldis, 2009). Any product that does not accord with this approach and the academic /scientific approach will not involve 'knowledge'. Therefore, the internet is not a source of knowledge. What it offers is "information", which is a cluster of raw data. Zins (2007) states that information is a collection of certain data in a certain context. Knowledge, on the other hand, results from an accumulated mass of information that can be designed in a new context. Knowledge is one step beyond information, and comprises a substep of wisdom. Thus, both students and researchers should have an awareness of whether the internet used in the process of research is a source of knowledge or information.

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