Pre-Service Teachers' Online Reading Comprehension Practices and Beliefs about Their Future Classrooms

Öğretmen Adaylarının E-Okuma-Anlama Uygulamaları ve Gelecekteki Sınıfları ile ilgili Algıları

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ABSTRACT: The purpose of this study is twofold: The first purpose is to investigate pre-service teachers' online reading comprehension practices. Secondly, pre-service teachers' perceptions about the use of online literacy and comprehension strategies in their future classrooms are investigated. The subjects of the study were 495 voluntary pre-service teachers selected from the department of classroom teacher education in one of the major universities in Ankara in 2011. The pre-service teachers' use of online reading strategies was measured by using "The Online Reading Comprehension Strategies Survey." The results revealed that: (a) majority of the subjects selected online materials to read because reading, editing, and using online material is easier, (b) the pre-service teachers used 41 of the 46 online reading comprehension strategies most of the time, (c) there was no significant difference between pre-service teachers who preferred to read online and paper-based materials regarding practicing online reading comprehension strategies, (d) the fourth year pre-service teachers used the online reading comprehension strategies the most frequently, and (e) all of the interviewed pre-service teachers were willing to teach online literacy and comprehension strategies in their future classrooms.

Keywords: Pre-service teachers, online reading, comprehension, beliefs

ÖZ: Bu araştırmanın iki temel amacı vardır. İlki, öğretmen adaylarının kendi e-okumalarında kullandıkları anlama stratejilerini belirlemektir. İkinci olarak, öğretmen adaylarının gelecekte öğretim yapacakları sınıflarında e-okur-yazarlık ve anlama stratejilerini kullanmaları ile ilgili algılarının belirlenmesi amaçlanmıştır. Araştırmanın örneklemini Ankara'da bulunan bir devlet üniversitesinin Sınıf Öğretmenliği Eğitimi Anabilim Dalı'nda, 2011 yılında, öğrenim gören 495 gönüllü öğrenci oluşturmaktadır. Öğretmen adaylarının kullandıkları e-okuma stratejilerini belirleyebilmek için "E-Okuma Anlama Stratejileri Ölçeği" geliştirilmiştir Veri analizi sonuçları, araştırmada aşağıda yer alan 5 temel bulgunun ortaya çıktığını göstermektedir. (1) Katılımcıların çoğu okuma yapacakları metinler arasında tercih yapmaları gerekirse, e-metinleri seçtiklerini belirtmişlerdir, çünkü e-metinlerin okunması, üzerlerinde düzeltme yapılması ve kullanılması daha kolay bulunmuştur, (2) Öğretmen adayları toplamda 46 adet olan e-metinleri okumada kullanılan stratejiler içerisinden 41'ini çoğu zaman kendi okumalarında kullandıklarını belirtmişlerdir, (3) Basılı ve e-metinler üzerinde okuma yapmayı tercih eden öğretmen adaylarının, e-okuma-anlama stratejilerini kullanma sıklıkları arasında anlamlı bir farklılık bulunamamıştır, (4) Dördüncü sınıf öğretmen adayları e-okuma stratejilerini en fazla sıklıkta kullanmıştır ve (5) Görüşme yapılan öğretmen adaylarının tamamı e-okuma-yazma ve anlama stratejilerini gelecekteki sınıflarında öğrencilerine öğretme konusunda istekli olduklarını belirtmişlerdir.

Anahtar Sözcükler: Öğretmen adayları, e-okuma, anlama, inançlar

1. INTRODUCTION

Rapid changes in Information and Communication Technologies (ICTs), especially Internet technology, have made the world smaller and re-defined people's communication habits. Many studies show that the Internet and ICT technologies have changed the definition and nature of literacy (Leu, 1997; Leu, 2002; Leu & Kinzer, 2000; Taffe & Gwinn, 2007). Leu et al. (2007) think that "the Internet is this generation's defining technology for literacy and learning" (p. 41). Leu, Kinzer, Coiro, & Cammack (2004) state that definition of literacy has always changed and it is still changing. Bromley (2006) also states that there is a requirement for regular redefinitions of literacy. It is clear that Web-based, digital texts must be included to define literacy (Eagleton & Dobler, 2007). It can be concluded from these statements that traditional definitions of literacy are changing and will continue to change because new ICTs are created.

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Technological changes result in dramatic increases in access to texts and opportunities for students to explore their own reading interests (Gambrell, 2006). It is important to ask whether offline or printed reading and online or Web reading is the same in light of these technological changes. The following sums up researchers' ideas regarding online and printed text reading. Coiro (2003, 2009) states that reading comprehension on the Internet is different, while Leu et al. (2007) claim that assuming the online and offline reading comprehension as the same process is a common, but inaccurate idea, since online reading requires new skills and strategies (Coiro, 2009; Leu et al., 2007; Mokhtari, Kymes, & Edwards, 2008/2009; Sutherland-Smith, 2002; Taffe & Gwinn, 2007). Other researchers, Eagleton and Dobler (2007) found Web literacy to be an extension of our traditional view of literacy, and stated that reading from print and reading on the Web is similar, but Web reading is more complex than reading printed text. According to David (2009), research shows that people use the same skills, such as using prior knowledge and making predictions to read and understand online and offline texts, but they need a set of additional critical-thinking skills for online reading to adapt to the constantly changing online context. Zhang & Duke (2008) share that view and state that the Internet and printed reading have similarities, but Internet reading has unique features.

Scholars agree that online reading requires readers to have additional skills and strategies. One main problem is that little research is conducted in the area of new literacies (Leu et al., 2004), and there is a need for more research to understand the skills and strategies needed to increase students' online reading comprehension (Leu et al., 2007). Readers generally use printed texts in a linear approach, but "Web-based texts are typically nonlinear, interactive, and inclusive of multiple media forms" (Coiro, 2003, p.459).

In today's digital world, all readers should employ comprehension skills and strategies used by skilled readers (Taffe & Gwinn, 2007). Sutherland-Smith (2002) indicated that accessing and analyzing information, and processing procedures to store or move text are among the key reading skills in Web literacy. Burke (2002) recommended to students to set their goals, and to ask questions about the site, the authors, the site's audience, the purpose of the site, and the reliability of the information the site included. Eagleton and Dobler (2007) recommended key comprehension strategies that can be used both in print and Web-based reading such as activating prior knowledge, predicting, determining important ideas, synthesizing, monitoring, and repairing. In addition, the authors stated that both print and Web readers should have decoding, fluency, and vocabulary knowledge to achieve automaticity and readers weak in these areas need appropriate scaffolding to effectively comprehend what they read.

Leu et al. (2004, 2007) framed the definition of new literacies of online reading comprehension around five major functions, and they stated that by using the Internet and other ICTs users can (1) identify questions, (2) locate information, (3) critically evaluate (analyze) the information, (4) synthesize information to answer the questions, and (5) communicate the answers with other people. Each of these functions contains skills, strategies, and dispositions that are both similar to and different from offline reading comprehension (Leu et al., 2007).

Reaching a definite set of online reading strategies that students can use on the Internet is not an easy task, because there is rapid changes, there is a need for research in this area (Leu et al., 2004), and "research specifically on Internet comprehension is in its infancy" (Duke, Schmar-Dobler, & Zhang, 2006, p. 320). As Leu et al. (2007) indicated, "a complete understanding of new literacies may be a Sisyphean task, never fully attainable" (p. 39). On the other hand, when integrating new technologies into comprehension lessons, teachers must realize that students should have a new set of skills (Lacina, 2008). It can be asserted that a generally framed (but not

a precise) set of comprehension strategies may be reached in online reading by taking into consideration Leu et al.'s (2004, 2007) above-mentioned five functions. It is imperative that students know how to adapt these rapidly changing ICTs, and have an ability to learn how to develop new strategies to use new ICTs effectively.

Teachers' roles change, but they become more important in new literacy classrooms (Leu et al., 2007). In this study, it is hoped that investigating the pre-service teachers' online reading comprehension practices and their perceptions about future practices in their classrooms will give teacher educators some important clues to learn about their needs, habits, and practices so that teacher educators can support these pre-service teachers in how to teach online reading comprehension skills to their future students. It will also aid teacher educators in re-structuring their teacher education programs.

2. PURPOSE

The purpose of this study is twofold: The first purpose is to investigate pre-service teachers' online reading comprehension practices. Secondly, pre-service teachers' perceptions about the use of online literacy and comprehension strategies in their future classrooms are investigated.

3. RESEARCH QUESTIONS

The following five questions were aimed to be answered in this study:

1) What causes pre-service teachers to read online text?
2) How often do pre-service teachers personally use online reading comprehension strategies?
3) Are there any differences between pre-service teachers who prefer to read online and paper-based materials regarding using online reading comprehension strategies?
4) Are there any differences among pre-service teachers' use of online reading comprehension strategies in terms of their years in the teacher education program?
5) What are the pre-service teachers' perceptions concerning the use of online literacy and comprehension strategies in their future classrooms?

4. METHOD

4.1. Research Design

In this study, "Sequential Explanatory Design" (Creswell, Clark, Gutmann, & Hanson, 2003), which is one of the six major mixed method designs, was used. In this design, researchers first collect and analyze quantitative data. Thereafter, qualitative data is collected and analyzed. Results of the qualitative and quantitative methods are integrated at the interpretation phase (Creswell, 2003). In this research, dominant paradigm is quantitative. An online reading comprehension strategies survey was used to collect quantitative data, and semi-structured interviews were used to gather qualitative data. The results obtained from these two methods were integrated and discussed in the conclusion section of the study.

4.2. Sample

The subjects of the study were 495 voluntary pre-service teachers (55% of all the pre-service teachers) selected from the department of classroom teacher education in one of the major universities in Ankara in 2011. The sample included 136 first-year, 137 second-year, 103 third-

year, and 119 fourth-year pre-service teachers. Approximately, 75% ($f = 371$) of the pre-service teachers were female and 25% ($f = 124$) of them were male. In the qualitative section of the study, 16 voluntary subjects (8 females and 8 males) representing the four-year-long teacher education program were interviewed. The interviewees were selected by using "Maximal Variation Sampling" (Creswell, 2005) strategy which is used for qualitative sampling. As Creswell (2005) stated, "Maximal variation sampling is a purposeful sampling strategy in which the researcher samples cases or individuals that differ on some characteristic or trait" (p. 204). In this study, the interviewees were selected by considering gender, GPA, the year subjects spent in the classroom teacher education program, and the time they spent for online reading. The most importantly, voluntary, informative, and cooperative subjects were recruited to the interviews.

4.3. Instrumentation

The pre-service teachers' use of online reading strategies was measured by using "The Online Reading Comprehension Strategies Survey." The survey included both traditional and online reading comprehension strategies together. The following procedures were used to develop the survey. First, a pool with 97-items was established, based on the related literature (Block & Duffy, 2008; Coiro, 2003, 2005; Duke et al., 2006; Grisham & Wolsey, 2008; Labbo et al., 2003; Leu et al., 2004; Leu et al., 2007; Leu et al., 2008; Sorapure, Inglesby, & Yatchisin, 1998; Sutherland-Smith, 2002; Taffe & Gwinn, 2007; Zhang & Duke, 2008). Second, the list was checked for repetitions, which were deleted, and the number of items was reduced. Third, experts' opinions were obtained to verify the survey's content validity (Johnson & Christensen, 2004; Vogt, 2007). Five experts who are studying literacy and ICTs evaluated the items and the content of the survey. Considering their judgments, final corrections and revisions were made on the survey. Fourth, the survey was pilot tested on 100 pre-service teachers and a reliability level of the survey was calculated. "An alpha of .70 or higher is often considered satisfactory for most purposes" (Vogt, 2007, p. 115). A reliability analysis revealed Cronbach's alpha reliability score of .93, which showed that the online reading comprehension strategies survey was highly reliable.

The final instrument had two sections. The first section included questions regarding personal information, and reading choices between online and offline reading. The second part of the survey included 46 Likert types of questions that allow pre-service teachers to rate their use of online reading comprehension strategies. The survey was given to the participants in the last 45 min of their courses.

In the qualitative section of the study, semi-structured interviews were conducted to investigate pre-service teachers' plans to use online literacy and comprehension strategies in their future classrooms. The following interview questions were asked and participants' responses were carefully listened to. Then, detail-oriented questions, elaboration probes (Tell me more about that), and clarification probes (What do you mean by _____?,) were used to increase the richness and depth of the participants' responses and to give them cues regarding the level of desired response (Patton, 2002). All the interviews were tape recorded and conducted in a private room.

1) Which online literacy and comprehension strategies are you planning to teach your future students?
2) Which literacy and comprehension strategies should your students know to live and survive in a digital world of the future?
3) How can computer technology and the Internet be used to enhance students' literacy and comprehension skills?

4) In your undergraduate education, have you received valuable and thorough training about using the Internet and computers to enhance your future students' literacy and comprehension skills? How should the teacher education program be improved?

4.4. Data Analysis

The percentage, frequency, and mean of the correct responses were calculated to meet the aims of the research questions. Open-ended survey questions were also coded and tallied as percentages and frequencies. The *t*-test and analysis of variance are probably the two most commonly and widely used inferential statistics (Krathwohl, 1998; Vogt, 2007). As subjects' reading (online and print-based reading) have two independent groups, an independent *t*-test was used to compare their use of online reading comprehension strategies. In addition, as variables related to the number of years subjects spent in college have more than two levels, a one-way ANOVA was used to determine significant differences. Thereafter, Scheffe post hoc comparison test was used to determine the groups that are significantly different from each other. The pre-service teachers' scores on the online reading comprehension strategies survey were interpreted by using the limitations and values as follows: "Never" 1.00-1.79, "Rarely" 1.80-2.59, "Sometimes" 2.60-3.39, "Most of the time" 3.40-4.19, and "Always" 4.20-5.00. If a strategy was rated as "Always" or "Most of the time," it was interpreted as frequently used. Accordingly, if an item was rated as "Never" or "Rarely," it was interpreted as an unused strategy. "Sometimes" was also interpreted as the strategy used with a low frequency.

In analyzing the qualitative data, the following procedures were used: (a) tape recorded interviews were transcribed and read in detail, (b) each interview was evaluated independently, (c) the data was summarized, (d) sub-categories were determined, (e) interviewees' responses to the same questions were compared, and (f) major themes and issues that emerged from the data were identified. Inferential and explanatory pattern codes were used to identify emergent themes and issues (Miles & Huberman, 1994). The following two major themes were found in the data: pre-service teachers' beliefs about the use of online literacy and comprehension strategies in their future classrooms, and pre-service teachers' opinions about teacher education programs. After completing the qualitative section of the study, member-checking strategy (Creswell, 2003; Hatch, 2002; Richards, 2005) was used to enhance the overall accuracy of the study. The participants reviewed the transcriptions of the interviews, interpretations of the data, and conclusions. Their feedback confirmed their agreement with the researchers' interpretations.

5. RESULTS

This section is reported under two headings as quantitative and qualitative results.

5.1. Quantitative Results

The answers of the first, second, third, and fourth research questions can be seen below.

The subjects were asked to report if they had online and paper-based versions of the same material to read, what would be their preference. In total, 410 pre-service teachers answered this question. The results revealed that 268 (65.37%) participants selected to read online materials, and 142 (34.63%) participants selected to read paper-based materials. As Table 1 shows, the subjects selecting online materials to read reported that they chose online reading because reading ($f = 82$), editing ($f = 28$), and using ($f = 20$) online material is "easier." Only 5 teacher candidates indicated the following items: "online reading gives me more options" and "reading online is more fun."

Table 1: Why pre-service teachers prefer to read online material

Why do you select online material to read?	f
Reading online material is easier	82
Editing online material is easier (e.g., the size of letters)	28
Using online material is easier	20
Online material is more systematic and well-organized	17
Saving and retrieving online material is easier	10
Online materials are more comprehensible	9
Highlighting and underlining on online material is easier	7
I like reading online	6
Online reading gives me more options such as copy, paste, etc.	5
Reading online is more fun	5

The subjects' scores concerning the use of online reading comprehension strategies were interpreted by using the values and limitations given in the data analysis section of the study. The pre-service teachers' self-reported use of comprehension strategies revealed that they used 41 of the 46 items most of the time (Table 2). Additionally, 4 strategies were sometimes employed. The only item that was practiced "rarely" by subjects was publishing texts on the Internet. These results indicate that the pre-service teachers employed most of the online reading comprehension strategies in their own readings.

Table 2: Means and standard deviations of the online reading comprehension strategies

Item	M	SD	Item	M	SD
1) I can select the keywords that suit for my search topics	4.14	.70	10) I can use the features of word processing programs effectively	3.99	.88
2) I use one word and multiple word keywords for my search	4.03	.75	11) I can try to understand the author's purpose by using the introduction and entry paragraphs of the texts	3.97	.82
3) I use more than one search engine to reach the information I want	3.59	1.08	12) If the text has an abstract, I skim and scan it	4.03	.89
4) I can choose the sources that best fit my purpose among the vast amount of search results	4.18	.77	13) I can handle the technical problems on the Internet such as dead links/URLs, moved pages, etc.	3.41	1.03
5) I actively participate in e-mail lists and discussion boards on the Web to reach the information I need	3.19	1.14	14) I know which links to click on a page and make predictions about the content of the linked page	3.78	.91
6) Before the reading, I have clear aims concerning which sources to read, why to read, and how to read	3.93	.85	15) I examine the menu or site map of the Internet site I read	3.33	1.04
7) Before the reading, I speedily skim and scan the headings and sub headings	4.15	.79	16) I can try to determine the main idea of the text I read	3.93	.83
8) Before the reading, I have questions in my mind that I need to answer	3.77	.86	17) I can identify the important information and ideas in the reading	3.94	.81
9) I do not have a problem with skills such as saving, downloading, etc.	4.05	.93	18) I determine my reading speed considering the type of text (informational or story), the reading difficulty of the text, and my reading aims	4.05	.82

(Table 2 continues)

Table 2 continued

Item	M	SD	Item	M	SD
19) During the reading, I stop from time to time and express what I understand in my own words	3.63	.93	33) I imagine what I read in my mind	3.96	.81
20) I consider whether my online reading fits with my prior knowledge and experience, and my previous readings from other sources	3.84	.82	34) I immediately leave the useless and unrelated internet sites that do not fit to my reading purposes	4.18	.94
21) I read considering the specialties of the text such as links, animations, graphics, menu, in-site search option, etc.	3.94	.82	35) I ignore the advertisements on the Internet sites that I read	4.09	.91
22) When reading online texts, I examine, understand, and interpret the visual presentations such as pictures, graphs, and tables	3.93	.85	36) I ask the questions that can test the reliability, validity, and correctness of the information I read and search for answers to these questions	3.79	.89
23) I can make a good decision about how much time to spend on a Web page or when to leave the page, according to my purpose	3.63	.96	37) I ask myself questions (*who, what, why, when, where, and how*) to learn how the Web sites or texts were created	3.54	.99
24) I investigate both the quality of the information in the links and the relationship between my search topics and the information the links possess	3.86	.85	38) If I do not understand the text I read, I refer to other texts written about the same topic	3.83	.84
25) I can pay particular attention to bold and italicized words or phrases	4.07	.86	39) If the Internet site contains the author's e-mail, I ask questions and request further information	3.01	1.23
26) I can find the meanings of unknown words by using dictionaries, spell checkers, or other Internet sites	3.87	.96	40) I take notes or make a record of the Internet sites that I will suggest to my future students	3.36	1.20
27) If I do not understand what I read, I re-read and go through the text	4.07	.85	41) I ask myself questions to test my comprehension level	3.65	.92
28) If there are some topics that I do not understand, I can discuss them with my friends	3.53	.98	42) I investigate whether the author has adequate information and education regarding the topics s/he wrote about	3.72	.92
29) I scroll down the page to the end when I read online documents	3.92	.90	43) I take special attention to whether or not the information I read on this page/site is up-to-date	3.98	.84
30) During the reading, I take notes, save the important pages, and add the site to my favorites	3.85	.99	44) I take special attention to whether or not the information I read on this page/site has political, religious, and gender related biases	3.96	.89
31) During the reading, if there are video links related to the topics I read, I watch and try to understand them	3.81	.90	45) I create my own text by using different Internet sites and sources when I read on the Web	3.53	1.11
32) To focus more on what I read, I would like to highlight the text	3.94	.80	46) I publish my written texts on the Internet	2.38	1.40

The independent *t*-test results (Table 3) showed that there was no significant difference between pre-service teachers who preferred to read online and paper-based materials regarding practicing online reading comprehension strategies.

Table 3: Independent t-test results between pre-service teachers who prefer to read online and print-based materials as related to the online reading comprehension strategies

	N	*M*	*SD*	*t*	*p*
Online Reading	268	174.14	21.27	.578	.563
Print-Based Reading	142	175.39	19.93		

N = 410. df = 408.　p > .05

As shown in Table 4, a significant difference was found among pre-service teachers regarding practicing online reading comprehension strategies in terms of the number of years they had been in the teacher education program. The Scheffe post hoc comparison test revealed that there was a difference between first ($M = 170.24$, $SD = 21.03$) and fourth-year ($M = 179.04$, $SD = 19.32$) pre-service teachers. The teacher candidates who are in their first years had the lowest mean scores, and the teacher candidates who are in their final years had the highest mean scores.

Table 4: ANOVA results among the different grades as related to the online reading comprehension strategies

Source	*SS*	*df*	*MS*	*F*	*Sig.*
Between	6322.705	3	2107.568	5.173	.002*
Within	200048.6	491	407.431		
Total	206371.3	494			

*p < .01.

5.2. Qualitative Results

After collecting and analyzing the quantitative data, the pre-service teachers' perceptions about the use of online literacy and comprehension strategies in their future classrooms were investigated by conducting semi-structured interviews. This section included the answer of the fifth research question.

5.2.1. Pre-service teachers' beliefs about the use of online literacy and comprehension strategies in their future classrooms

Pre-service teachers were asked to report whether or not they would use online literacy and comprehension strategies in their future classrooms. All of the teacher candidates indicated that they are willing to teach these strategies to their future students, but they reported some problems. First, they have a lack of knowledge about the online literacy. They did not take any courses and did not read about online literacy and comprehension strategies. A fourth-year female pre-service teacher elucidated this problem and stated,

"I am willing to teach online literacy and comprehension strategies to my future students, but I do not know what these strategies are. First, I have to search and determine them and then decide which ones I can teach to my future students. I guess I can teach them basic computer, Internet, and search skills."

Second, half of the teacher candidates indicated that elementary school students should first learn traditional reading comprehension strategies and skills. After students internalize these strategies, online reading comprehension strategies should be taught. Twelve pre-service teachers believed that the fourth grade would be a good time to start teaching online literacy and comprehension strategies, which should include; searching, selection of keywords, determining the reliability of the knowledge the Web site includes, and evaluating and analyzing kinds of strategies for online reading comprehension.

The subjects indicated that computers and the Internet have many opportunities to improve students' reading, writing, and listening skills. They also stated that some of the online games such as puzzles, or finding the missing letters, or other word games are very useful for the students. A third-year female teacher candidate stated,

"We used a Web site in one of our courses that aimed to show teacher candidates how to teach reading and writing instruction. In this Web site, there are sounds of the letters, syllables, and words. Teachers can use these sounds in their emergent literacy classrooms to introduce letters. There are many excellent illustrations, demonstrations, and games. These kinds of activities are very interesting for the first grade students, and very helpful to improve their reading and writing."

Finally, the interviewees stated that classroom teachers should use computers and the Internet carefully in their classrooms as computers may hurt students' eyes and the students may visit some useless Web sites that include harmful and biased contents, pictures, movies, and links.

5.2.2. Pre-service teachers' opinions about teacher education programs

The teacher candidates reported that their current teacher education program does not include any courses about online literacy and comprehension strategies. Some online literacy related topics, especially online reading, were superficially covered in the Reading and Turkish Instruction courses. All of the interviewed pre-service teachers agreed that the topics including skills necessary to analyze, synthesize, and evaluate the Web sites; search skills; lists of useful online comprehension strategies that are recommended to teach elementary school students; and how to teach these strategies should be offered in a new course named "Online Literacy and Comprehension Instruction" in the department of classroom teacher education. This need can be seen in the following first-year male pre-service teacher's statement.

"I am at the beginning of my four-year-long journey in this program. As far as I know, we will not receive any courses about online literacy and comprehension. I believe there should be at least one course. We are living in a digital age. Most of the elementary school students frequently use computers and the Internet. An ideal classroom teacher should have a repertoire of skills and strategies to teach their students how to use the Internet and computers as an educational tool so that students can learn how to successfully exploit the information they find on the Internet and learn to avoid harmful Web sites."

6. CONCLUSION

The results of this study illustrate that the majority of pre-service teachers chose to read online materials, and found reading, editing, and using online materials to be easy. The survey results show that pre-service teachers practiced 41 out of 46 strategies, the majority of the time. In other words, participants of this study frequently use the online literacy and comprehension strategies. The results also reveal that there were no respondents' reading preferences related

significant differences. Pre-service teachers who are in their final year practiced online reading comprehension strategies the most frequently. It can be concluded that the pre-service teachers become more active users of online reading comprehension strategies at the end of their four-year-long education. By this time in their studies, they have prepared many research projects and papers, and the fourth year pre-service teachers have learned to use the strategies with practice. It can be argued that the more active Internet and computer users more frequently employed the strategies and had higher scores. A similar result is found in Esmer's (2013) study in which the final year pre-service teachers had the highest scores in all parts of the online reading comprehension questionnaire.

All of the interviewed pre-service teachers were willing to teach online literacy and comprehension strategies in their future classrooms, but they have a lack of knowledge about these strategies. The teacher candidates indicated that their future students should first learn traditional reading comprehension strategies, and that online reading comprehension instruction should be started at the fourth grade level. This kind of instruction should include searching, investigating the reliability of the sources, and analyzing and evaluating strategies for online reading. The participants' recommendation is in line with Eagleton and Dobler's (2007) study. The authors found Web reading as a cognitively complex effort, and claimed that Web reading should be started after readers are comfortable with the use of reading strategies with printed texts. McKenna (2001) also suggested that the differences between electronic and printed texts should be clearly pointed out to students. According to McKenna, an e-book demonstration, an Internet awareness session, and a multimedia-publishing lesson may help readers to be aware of the differences between electronic and printed texts.

The subjects of this study indicated that the classroom teacher education program should include a course about online literacy and comprehension instruction. According to the participants, in this course, the pre-service teachers should learn all the online literacy strategies that their future students need. As Kinzer & Risko (1998) recommend, pre-service teachers should see the effective uses of technology that enhance teaching and learning activities in college level courses so that these teacher candidates may follow the same model and effectively use technology for their future students. As a result of a successful program of instruction for pre-service teachers, we can expect them to take a more active role in their students' online literacy related activities, and monitor their students' online reading and comprehension processes (McNabb, 2005/2006). Leu et al. (2007) also indicate that teacher educators should prepare teacher candidates who can understand how to integrate instruction about online reading comprehension into their content areas, and classroom teachers should successfully integrate the Internet Workshop, Internet Project, Internet Inquiry, and Internet Reciprocal Teaching models into their curriculum. Based on the results of this study and the above mentioned researchers' statements about college level instruction for the pre-service teachers, it is recommended that online literacy and comprehension instruction should be adequately covered in the existent courses of classroom teacher education program such as Instructional Technology and Material development, Emergent Reading, and Turkish Instruction. In addition, teacher educators and policy makers should think about the idea of offering a new course named "Online Literacy and Comprehension Instruction" in the classroom teacher education program as the online-screen reading and ICT tools in the teaching-learning process will gain importance with the FATIH project.

There is not clear information regarding how teachers should teach new literacies of online reading comprehension because "so little research has been conducted to study online reading comprehension in classroom learning contexts" (Leu et al., 2007, p. 59). Scholarly research should suggest specific strategies that can be employed by classroom and content area teachers.

This study is limited to pre-service teachers' self-reported practices and beliefs. In future, observational and experimental studies that focus on pre-service teachers', in-service teachers', and their elementary or secondary level students' actual use of online literacy strategies should be conducted. In addition, experimental studies that investigate reading strategies these groups practice on the online narrative and informational texts should be adequately conducted.

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Uzun Özet

Problem Durumu: Teknolojik değişiklikler öğrencilerin ilgilerini belirlemelerine yardımcı olmakta ve ilgilerini çeken metinlere ulaşmalarını kolaylaştırmaktadır. İnternet ve diğer Bilgi ve İletişim Teknolojileri, insanların iletişim ve okuma alışkanlıklarını değiştirmiştir. Yeni teknolojiler kullanılmaya devam ettiği sürece okuma-yazmanın klasik olarak yapılmış tanımının da değişeceği beklenmektedir. Öğretmen adaylarının e-okuma çalışmalarını yaparken kullandıkları anlama stratejilerinin ve adayların gelecekteki planlarının araştırılması, öğretmen eğitiminde görev alan eğitimcilere, adayların ihtiyaçları, alışkanlıkları, yaptıkları günlük uygulamalar ve gelecekteki sınıflarında yapmayı planladıkları etkinlikler ile ilgili önemli bilgiler verecektir. Bu çalışmanın ayrıca öğretmen eğitimi programlarının yeniden düzenlenmesinde eğitim fakültelerine önemli bilgiler sunacağı da düşünülmektedir.

Araştırmanın Amacı: Bu araştırmanın iki temel amacı vardır. İlki, öğretmen adaylarının kendi e-okumalarında kullandıkları anlama stratejilerini belirlemektir. İkinci olarak, öğretmen adaylarının gelecekte öğretim yapacakları sınıflarında e-okur-yazarlık ve anlama stratejilerini kullanmaları ile ilgili algılarının belirlenmesi amaçlanmıştır. Bu amaçlar doğrultusunda, araştırmada aşağıdaki beş sorunun cevaplanmasına çalışılmıştır. 1) Öğretmen adaylarının e-metinleri okuma nedenleri nelerdir? 2) Öğretmen adayları ne sıklıkla e-okuma-anlama stratejilerini kendi okumalarında kullanmaktadır? 3) Basılı ve e-metinleri okumayı tercih eden öğretmen adaylarının, e-okuma-anlama stratejilerini kullanma sıklıkları arasında anlamlı bir farklılık var mıdır? 4) Farklı sınıflarda öğrenim gören öğretmen adaylarının e-okuma-anlama stratejilerini kullanma sıklıkları arasında anlamlı bir farklılık var mıdır? 5) Öğretmen adaylarının e-okuma-yazma ve anlama stratejilerini gelecekte öğretmeni olacakları sınıflarda kullanmaları ile ilgili algıları nelerdir?

Araştırmanın Yöntemi: Bu araştırmada "Ardışık Açıklayıcı Tasarım" kullanılmıştır. Bu tasarımda, araştırmacılar önce nicel olarak bilgileri toplamakta ve analiz etmektedir. Daha sonra nitel veriler toplanmaktadır. Son olarak, sayısal ve sözel veriler araştırmanın yorumlar bölümünde birleştirilmekte ve tartışılmaktadır. Araştırmanın örneklemini Ankara'da bulunan bir devlet üniversitesinin Sınıf Öğretmenliği Eğitimi Anabilim Dalı'nda 2011 yılında öğrenim gören 495 gönüllü öğrenci oluşturmaktadır. Öğretmen adaylarının kullandıkları e-okuma stratejilerini belirleyebilmek için 46 maddeden oluşan bir ölçek geliştirilmiştir. Ölçeğin geçerlik çalışması okuma-yazma öğretimi ve yeni teknolojiler alanında çalışan 5

uzmanın görüşleri alınarak ve bu görüşler doğrultusunda ölçekte düzenlemeler yapılarak sağlanmıştır. Ölçeğin ilk bölümünde öğretmen adaylarının kişisel bilgileri ve okuma tercihleri (basılı materyal veya e-materyal) ile ilgili sorular yer almaktadır. İkinci bölümde ise Likert tipi maddeler yer almaktadır. Geliştirilen ölçeğin ön uygulaması 100 öğretmen adayı üzerinde yapılmış ve Cronbach alfa güvenirlik katsayısı .93 olarak hesaplanmıştır. Bu katsayı ölçeğin yüksek derecede güvenilir olduğunu göstermektedir. Araştırmanın nitel boyutunda ise yarı-yapılandırılmış görüşmeler yardımıyla öğretmen adaylarının gelecekteki sınıflarında e-okuma ve anlama stratejilerini kullanmaları ile ilgili planları araştırılmıştır. Verilerin analizinde yüzde, frekans ve aritmetik ortalamalar hesaplanmıştır. Öğretmen adaylarının okuma tercihleri (basılı ve e-metin) ve farklı sınıflardaki adayların e-okuma stratejilerini kendi yaptıkları okumalarda kullanmaları ile ilgili anlamlı farklılıklar olup olmadığı ise bağımsız *t*-testi ve tek yönlü varyans analizi teknikleri kullanılarak analiz edilmiştir. Nitel verilerin analizinde ise teybe kaydedilen görüşmelerin çözümü yapılarak, bilgisayar ortamına yazılı olarak kaydedilmiştir. Verilerin tekrarlı okunması ve görüşmelerin kendi aralarında karşılaştırılması sayesinde alt kategoriler, ana temalar ve sorunların belirlenmesine çalışılmıştır. Veri analizi sonuçları, araştırmada iki ana tema olduğunu ortaya çıkarmıştır. Bunlar: (a) öğretmen adaylarının e-okuma stratejilerini gelecekte öğretim yapacakları sınıflarında kullanmaları ile ilgili inançları ve (b) adayların öğretmen eğitimi programları hakkındaki görüşleridir.

Araştırmanın Bulguları: Veri analizi sonuçları, araştırmada aşağıda yer alan 6 temel bulgunun ortaya çıktığını göstermektedir. (1) Katılımcıların çoğu okuma yapacakları metinler arasında tercih yapmaları gerekirse, e-metinleri seçtiklerini belirtmişlerdir, çünkü e-metinlerin okunması, üzerlerinde düzeltme yapılması ve kullanılması daha kolay bulunmuştur, (2) Öğretmen adayları toplamda 46 adet olan e-metinleri okumada kullanılan stratejiler içerisinden 41'ini çoğu zaman kendi okumalarında kullandıklarını belirtmişlerdir, (3) Basılı ve e-metinler üzerinde okuma yapmayı tercih eden öğretmen adaylarının, e-okuma-anlama stratejilerini kullanma sıklıkları arasında anlamlı bir farklılık bulunamamıştır, (4) Birinci sınıfta öğrenim gören öğretmen adayları e-okuma-anlama stratejilerini en az ve dördüncü sınıf öğretmen adayları ise en sık olarak kullanmıştır. Bu iki grup arasında dördüncü sınıf öğretmen adayları lehine anlamlı bir farklılık bulunmuştur, (5) Görüşme yapılan öğretmen adaylarının tamamı e-okuma-yazma ve anlama stratejilerini gelecekteki sınıflarında öğrencilerine öğretme konusunda istekli olduklarını belirtmişlerdir, (6) Öğretmen adayları, internet sitelerini analiz etmede ve değerlendirmede gerekli olan beceriler, araştırma becerileri ve e-okuma-yazma ve anlama ile ilgili stratejilerin ilköğretim öğrencilerine öğretilmesi gerektiğini belirtmişlerdir.

Araştırmanın Sonuçları: Araştırmanın sonuçları, öğretmen adaylarının e-okuma-yazma ve anlama stratejileri konusunda bilgi eksikliklerinin olduğunu göstermiştir. Araştırmanın sonuçlarını dikkate alarak, sınıf öğretmenliği eğitimi lisans programında yer alan Öğretim Teknolojileri ve Materyal Geliştirme, İlkokuma Yazma Öğretimi ve Türkçe Öğretimi gibi derslerde e-okuma ve anlama konularının yeterince işlenmesi önerilmektedir. Literatürde öğretmenlerin e-okuma-anlama stratejilerini nasıl öğretmesi gerektiği ile ilgili net bilgiler bulunmamaktadır çünkü bu alanda yeterince araştırma yapılmamıştır. Sınıf ve branş öğretmenlerinin kullanabilecekleri stratejilerin araştırmacılar tarafından belirlenmesi gerekmekte ve bu alanda yeni araştırmalara ihtiyaç duyulmaktadır. Bu araştırma öğretmen adaylarının kişisel görüşleri ve değerlendirmeleri ile sınırlıdır. Gelecekte öğretmen adaylarının, öğretmenlerin ve ilk-orta öğretim öğrencilerinin e-okuma-yazma ve anlama stratejilerini okumalarında kullanma düzeylerinin gözlenmesi ve karşılaşılan problemlerin belirlenmesi ile ilgili araştırmaların yapılması önerilmektedir.

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Citation Information