FACILITATING THE ONLINE INQUIRY PROCESS FOR LIMITED ENGLISH

USERS THROUGH AN ONLINE SEARCH-AND-FIND TOOL

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DECLARATION OF ORIGINALITY

I, Melike İşcan, certify that

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ABSTRACT

Facilitating the Online Inquiry Process for Limited English Users

Through an Online Search-and-Find Tool

This study explores the effects of educational software based on scaffolding design principles. Online Search-and-Find Tool (OSFT) was designed to help English Language Learners (ELL) refine what they intend to search, reflect on what they find and increase the quality of the information. The study was conducted in a computer laboratory with a total of 56 preparatory students in a university. While the experimental group participated in the study by engaging with a full-fledged version of the OSFT, the control group completed the study by using a stripped-down version of the tool without any scaffolding except the basic instructions to carry out the task. The scores of both groups' online information synthesis tasks were compared. Additionally, their online reading habit and online information search strategy scores were correlated with the task scores. The experimental groups' answers to the OSFT questions/instructions and their feedback for the tool were analyzed. The results showed that the experimental group did not significantly outscore the control group in their tasks and there was not any significant correlation between both groups' task scores and their online reading habit and online information search strategy scores. However, the feedback from the experimental group indicated that the OSFT was well-received. The findings did not provide support for the use of an online search and find a tool designed by scaffolding principles during the online inquiry by university-level ELLs. Recommendations are offered to improve the tool and implement it into university level curriculums.

ÖZET

Sınırlı İngilizce Kullanıcıları İçin Çevrimiçi Arama-ve-Bulma Aracı Yoluyla Çevrimiçi Sorgulama Sürecinin Kolaylaştırılması

Bu çalışmanın amacı yönlendirici destek prensiplerine dayalı bir eğitim yazılımının etkilerini araştırmaktır. Çevrimiçi Arama-ve-Bulma Aracı (ÇABA), İngilizce dil öğrenen kişilerin neyi aramaya niyetli olduklarını ve bulduklarını düşünmelerine, buldukları bilginin kalitesini artırmalarına yardımcı olmak için tasarlanmıştır. Çalışma, toplam 56 üniversite hazırlık öğrencisi ile bilgisayar laboratuvarında gerçekleştirilmiştir. Deney grubu, ÇABA'yı kullanarak çalışmaya katılırken, kontrol grubu aracın temel talimatlar dışında herhangi bir yönlendirme içermeyen daha basit bir versiyonunu kullanmıştır. İki grubun çevrimiçi bilgi sentezi görevlerinin puanları karşılaştırılmıştır. Ayrıca, grupların çevrimiçi okuma alışkanlıkları ve çevrimiçi bilgi arama stratejisi puanları, görev puanlarıyla ilişkilendirilmiştir. Deney grubunun ÇABA sorularına/talimatlarına cevapları ve araç hakkındaki geri bildirimleri analiz edilmiştir. Sonuçlar, deney ve kontrol grubunun çevrimiçi bilgi sentezi görevlerindeki puanları arasında anlamlı bir fark bulunmadığını ve her iki grubun görev puanları ile çevrimiçi okuma alışkanlığı ve çevrimiçi bilgi arama stratejisi puanları arasında anlamlı bir ilişki olmadığını göstermiştir. Ancak, deney grubundan ÇABA'ya dair alınan geri bildirimlerin olumlu yönde olduğu görülmüştür. Bulgular, çevrimiçi araştırma sırasında yönlendirici destek prensiplerine dayandırılarak tasarlanan bir aracın, üniversite seviyesinde İngilizce öğrenen kişiler tarafından kullanımına destek sağlamamıştır. Aracı geliştirmek ve üniversite düzeyindeki öğretim programlarında uygulamak için önerilerde bulunulmuştur.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF FIGURES

ABBREVIATIONS

ÇABA   Çevrimiçi Arama-ve-Bulma Aracı

EFL   English as a Foreign Language

ELL   English Language Learner

ESL   English as a Second Language

ICT   Information and Communications Technology

L1   First language

L2   Second language

OIT   Online Inquiry Tool

OSFT   Online Search-and-Find Tool

CHAPTER 1

INTRODUCTION

More and more young people are using the internet and new generations are born into it, known as digital natives (Leu, Forzani, & Kennedy, 2013) for whom most aspects of life are online (Alvermann, Hutchins, & DeBlasio, 2012). It wouldn't be too far from the truth to suggest that these so-called "Internet Generation" may be overdosing with its use. Nevertheless, the intense use of the internet and online interaction do not usually translate to better online information search skills (Bennet, Maton, & Kervin, 2008). Recent studies have shown that quick access and easy search prompts often fall short of returning quality information, and this may point to the lack of some new literacy skills (Coiro & Dobler, 2007). It is possible to facilitate learning of such new skills through tools designed to search, find and evaluate online information (e.g., IdeaKeeper, ORCA Project, and Online Inquiry Tool).

Although the research claims that the profound engagement with the Internet does not promise a successful online search process, it would be wrong to assume that all interaction with digital technology is fruitless. For example, many findings have pointed out the fact that living online may be helping with learners of English as a Second (ESL) and Foreign (EFL) Language (Slavin et al., 2008). Reading is critical for acquiring a new language (Cummins, 1991; Eskey, 2005, Chapelle & Jamieson, 2008). Technology may help language learners with their reading by providing more active, motivated and fluent reading opportunities (Park & Kim, 2016; McNabb et al., 2002; McPherson, 2005). Effective use of the internet is a contributing factor in the acquisition of reading skills (Kellner, 2001). Online reading, however, calls for more than working with mere static text. It is an extended

world of hyperlinks, active images and online advertisement. It appears that conventional literacy skills for working with static text may have some shortcomings when working with online text, on account of most students employing additional strategies when working online.

A major difference between online text and print text is that online text may have links as well as additional information when activated (De Ridder, 2000; Hughes, McAvinia, & King, 2004). Additionally, the online text does not have to be read in a linear fashion, with instant switches to other text back and forth (Berk & Devlin, 1991). Online text also involves making inferences about information based on various cues (Burbules & Callister, 2000), which could lead to active engagement and broader information processing (Patterson, 2000). As such, online reading includes additional features that could help or hinder readers with their construction of meaning out of the text. The quality of information obtained online is subject to confirmation by the user, unlike some static text which may have already been through an editing process assuring the quality of information by proper authorities. Such assurance for online text is usually the responsibility of the reader, who will need to develop additional reading strategies especially when searching online, such as reflection on your search term, how to work the text, and diligent control of the reading process (Oxford & Crookall, 1989). Lack of these skills often times results in lower quality of information obtained (Heller, 1990; McPherson, 2005), and tools are available for remedy (Zhang & Quintana, 2012) for scaffolding, which is "the process by which a teacher or more knowledgeable peer provides assistance that enables learners to succeed in problems that would otherwise be too difficult" (Quintana, et al., 2004, p. 338).

1.1 Statement of the problem

Numerous studies have shown that online reading requires skills, practices, and dispositions which differ significantly from strategies used in traditional printed text reading (Castek et al., 2007; Leu et al., 2011; Coiro, 2003, Coiro & Dobler, 2007; Lawless & Brown, 1997; Mayer, 1997; Patterson, 2000; Su & Klein, 2006; Yang, 2000; Hartman, Morsink, & Zheng, 2010). Students frequently have difficulties in locating, evaluating or synthesizing online information (Forzani & Burlingame, 2012; Graham & Metaxas, 2003; Kuiiper & Volman, 2008). They may fall short of evaluating how credible and trustworthy the information is. They could be facing serious problems during different processes of online reading such as evaluating the credibility of the information, eliminating doubtful information, or synthesizing information from multiple web pages (Coiro & Dobler, 2007). A growing body of research investigating the EFL online reading strategies offers some insights about the nature of online search (Akyel & Erçetin, 2009; Chun, 2001; Konish, 2003; Park & Kim, 2011; Ariew & Ercetin, 2004; Chun & Plass, 1997; Mayer, 1997; Sakar & Ercetin, 2005). Nevertheless, there is still an apparent need for better online search and reading strategies and scaffolds for the process.

1.2 Significance of the study

The tool developed for this study was inspired by other educational software such as IdeaKeeper, The ORCA Project, and Online Inquiry Tool (OIT) which are based on scaffolding principles. However, these tools were mostly studied by middle school students who were native speakers of English. These studies indicate the facilitatory effect of the tools during four self-reading patterns in online inquiry processes: locating, evaluating, synthesizing, and evaluating. The participants in the studies had

better online search and find processes, refined the qualified information among many others, identified the sub-questions and keywords better compared to the ones who did not engage with the tools themselves. Although they are observed to have more relevant, credible, and trustworthy online information; they do not provide an insight for the students who either learn English as a Foreign/Second Language or study in university-level institutions.

This study will examine the effect of online educational software on university level students who learn English as a Foreign Language during online inquiry processes. Such research has not been reported in the Turkish context before, either.

To ensure a genuine adoption of scaffolding framework, the task in this study has been designed as a problem-based online task which urges for an answer and therefore guidance in online environments as recommended by Zhang and Quintana (2012) and Coiro and Dobler (2007). At the end of the study, the effects of the OSFT, the evaluation of the participants who use the tool will be unfolded and suggestions for using an online tool in online inquiry will be identified and recommended.

1.3 Purpose of the study

A number of online tools (e.g., IdeaKeeper, ORCA project, and OIT) that help college students find and evaluate their search items are available in English and have been studied in secondary education with native speakers of English in terms of how helpful they were in increasing the quality of the information being sought. For this study, a similar tool is designed to help college-level EFL students refine what they intend to search and reflect on what they have found. The reason for developing

a new tool instead of using an already existing one is the fact that other tools are designed for native speakers of English who study in secondary school. Therefore, the possibility of having a tool which is appropriate neither for ELLs with the language level of pre-intermediate nor university level students was attempted to avoid. EFL learners' assessments of their reading habits and online search skills are investigated. Lastly, EFL learners' evaluation of the OSFT are revealed.

CHAPTER 2

LITERATURE REVIEW

The review of the literature is organized in two main sections: previous findings of new literacies and online inquiry, and evidence from the literature pointing out EFL learners' strategies for reading both online and static texts.

2.1 New literacies and online inquiry

2.1.1 New literacies

New literacies are generally defined either in terms of social practices (Street, 1999), or new discourses (Gee, 2003). Despite variation, most definitions of new literacies anchor on the idea that known nature of literacy has changed, and prevalence of digital technologies has led to new form of literacies affecting reading comprehension skills and strategies (Friedman, 2005), in such a way that despite still at work, traditional reading strategies fall short of reading efficiently on the Internet (Coiro, 2003). Those strategies need some improvements in generating questions, locating required information and, once located, evaluate, judge and, eventually, synthesize so that the information can be communicated (Leu et al., 2004).

More than one-sixth of the world population reads online. These readers still use static reading comprehension skills. For instance, they use inferential reasoning strategies while reading online which are informed by their literal matching skills (Coiro & Dobler, 2007). They also infer meaning from online texts by using their knowledge of printed informational text and apply their traditional self-regulated reading processes such as information seeking, monitoring the choice of reading strategies or using alternative strategies for better comprehension (Parie et al., 1983).

Although a few traditional functions still apply the online reading process, we still need new, more powerful, and unique cognitive strategies and processes to construct meaning from the Internet (Leu, 2005; Landow, 1994; Reinking, 1997). We must locate, evaluate, synthesize from, and communicate multiple and sometimes questionable online resources.

Like any problem-based process, reading online is promoted by seeking answers to a question. The first step is to gather some online material, usually performed using a search engine. Efficient searches include locating sub-questions, generating keywords, choosing appropriate web pages, comparing information found, connecting different pieces of information, assessing the quality of information found and corroborating it with some images, references and other text as a part of searching (Coiro & Dobler, 2007). As noted by The Rand Reading Study Group (2002), "accessing the Internet makes large demands on individuals' literacy skills; in some cases, this new technology requires readers to have novel literacy skills, and little is known about how to analyze or teach those skills." (p. 4).

Web sources are widely used in education, especially in the classroom including reading, writing, language arts, or English classes (Leu, 2005) and students need to develop new literacies to perform an online search, do online assignments, or to prepare presentations. Leu et al., (2004) attempt to define new literacies at school basing on several principles. Mainly, they see the Internet and other Information and Communications Technology (ICT) as the essence of technology and new literacies, and state that using new literacies' whole potential is a necessity for this technology. They also add that there are multiple versions of new literacies, which are deictic in nature, and the relation between being literate and technological is transactional. According to these principles, different and current versions of strategic knowledge

are essential for new literacies, at the heart of which are critical literacies. Learning is a vital construct, speed is important, and teachers are now more indispensable since their roles have also changed with new literacies. These principles will be beneficial for students and teachers when adopted into the curricula and used to structure instruction for both students and teachers for new literacies (Leu, Forzani, & Kennedy, 2013).

2.1.2 The dual level theory of new literacies

Acknowledging the changing nature of reading and searching online (Leu, O'Byrne, Zawilinski, McVerry, & Everett Cacopardo, 2009; Leu, Kinzer, Coiro, Castek, & Henry, 2013), the dual theory of new literacies pose two different levels of new literacy analysis: the upper and lower-case literacies (Leu, Kinzer, Coiro, & Cammack, 2004).

The lower-case new literacies are basically a set of literacies caused by a specific type of technology and its practices in a society, such as text messaging, using search engines or the semiotics of multimodality in online media (Lewis & Fabos, 2005; Kress, 2003). It includes the knowledge that we have about fewer stable technologies. On the other hand, the upper-case New Literacies are broader and more comprehensive. They are more stable and common, including the work in various forms of lower-case new literacies such as having a social media account or making a voice call. The upper-case New Literacies enable the theory of new literacies to keep up with the changes in lower-case new literacies, which add new dimensions and deeper understanding to the larger and continuously changing theory of new literacies (Leu et al., 2009).

According to Coiro et al. (2008), those lower-case new literacies have four elements in common that define this theory: i. the new literacies theory means having new strategies, social practices, and skills which are necessary for new technologies; ii. the theory and the meaning of new literacies are always exposed to change as the technology changes; iii. full participation in a global community is a necessity for new literacies; and iv. the theory is multifaceted which means in order to understand it, numerous points of view are needed.

2.1.3 Challenges in online inquiry

According to Quintana et al., (2005), "Online inquiry involves a set of interconnected processes, including generating a scientific question called driving question, searching for information on the Web, evaluating and making sense of online information, and integrating different pieces of information to answer the driving question." (p. 181). Basically it is a process requiring effective use of online resources and according to some studies, when the learners have more web experiences, they have better online inquiry skills since they are more familiar with online sources and can use them more effectively which eventually enables them to handle the processes of online inquiry better (Thatcher, 2008; Tsai & Tsai, 2003).

One of these processes is the inquiry planning process. It involves thinking of a driving question and setting up the information goals before looking for information. Another process is the information seeking process which includes searching for information to achieve the investigation goals. The information analysis process involves reading, analyzing, and evaluating the information to make sense of it. Lastly, the information synthesis is the process of comparing and connecting what the learners have found so far and of forming an argument for the

driving question (Quintana & Zhang, 2004). The importance of these processes are acknowledged by many studies and learners frequently experience problems with these processes.

In a study by Zhang and Quintana (2012), process related problems are roughly divided into three. The first problem is that learners are likely to engage with online material superficially. In a study by Wallace et al. (2000) with sixth grade students, it was found they had naïve task understanding and poor process management skills during the online inquiry. Another study by Kuiper et al. (2009) also indicated that 5th-grade students' online reading and online inquiry performances were not high because of their impatience during searching for relevant online information. Li and Lim (2008) have shown that learners plan their process poorly which possibly results in poor online inquiry skills. For instance, they were observed to copy and paste almost without any hesitation, and not to revise their findings. Accordingly, Brem et al. (2001) underline the fact that high school students may rely on scientific jargon, statistics, or quotes, called surface markers in online search when they try to support their findings with evidence from websites. Hoffman et al. (2003) also propose that students mostly and sometimes only focus on the title of a website, its appearances or the images used in it, instead of the quality and the relevance of the information, and the name of the author or the hosting agency for reliability. Hoffman (1999) also affirms that most of the students are inclined to ask simple factual information and they look for easy answers; they probably skim and scan the websites too quickly and not carefully enough.

The second problem is the disorientation and distraction during online inquiry resulting from recording URLs, looking for keywords, handling online advertisements and hyperlinks (Dias, Gomes, & Correia, 1999; Ruthwen, Hennessy,

& Deaney, 2005; Kuiper, et al., 2009). There are multiple layers of online texts; they contain tabs, pop-up windows or flashy advertisements which may be a burden for the readers while they struggle to focus on their objectives.

And lastly, learners may regulate themselves poorly since online inquiry demands more reader control during an online search and over the reading flow. Due to this workload, self-regulation of thoughts and feelings might be low while dealing with a online goal (Zimmerman, 2002; Zhang & Quintana, 2012). Kiili, Laurinen and Marttunen (2008) assert that learners' judgements of the information quality and cognitive authority on the Internet are sometimes predictive and evaluative, which means learners may read to meet their personal expectations (predictive) or they may evaluate the nature of the information poorly (evaluative). To test this idea, they carried out a study with upper secondary school students who were supposed to read online and evaluate the credibility and relevance of online information regarding the assigned writing task. They observed that most of the students spent their time reading on the Internet; which restricted the time left for writing. Students accepted information from Wikipedia without questioning, a point also made by Zhang and Quintana (2012) suggesting that students tend to engage with the online material superficially. They also had problems while locating the relevant information and integrating it into their writing tasks which can be interpreted as not being able to take the control of the comprehension process. They rarely questioned the credibility of the information and they tended to click on the first link found in search results.

2.1.3.1 IdeaKeeper

Several online inquiry tools are designed to help deal with the challenges of online reading. One such tool is IdeaKeeper (Fig. 1) by Zhang and Quintana (2012) which

was designed according to learner-centered design principles and scaffolding design guidelines. According to these scaffolding design guidelines, representations of the learning materials can be supplemented by several ways to uncover the properties of the data, such as by tools and artefacts on the semantics of the discipline, supplement of structure for demanding and complex tasks, embedded expert guidance, and non-salient routine tasks to be conducted by the learners. These supports enable learners to have easier articulation and reflection during the investigation process which eventually helps them solve problems (Quintana et al. 2004).
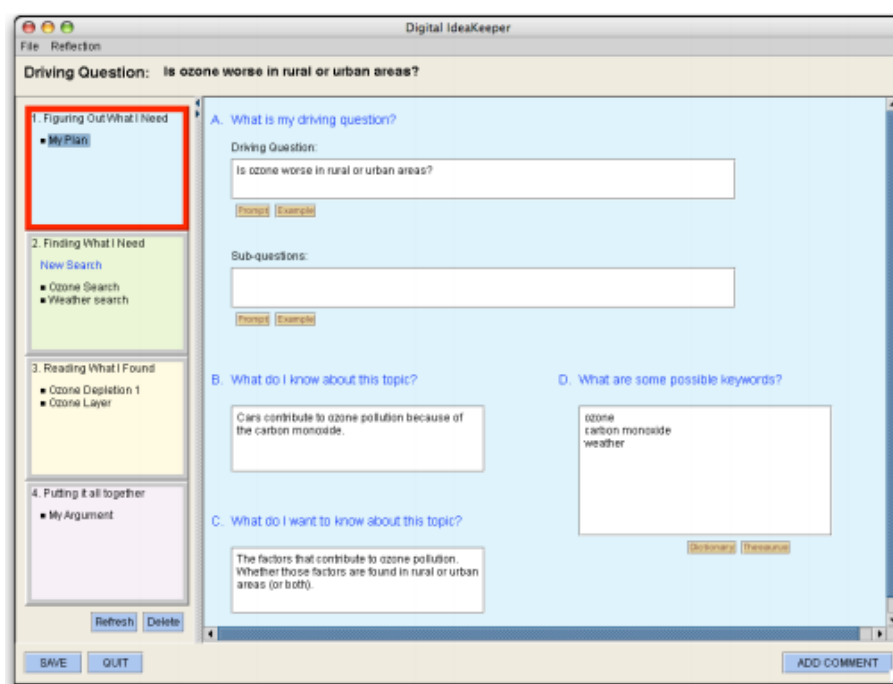
Fig. 1 The main screen for IdeaKeeper (Zhang & Quintana, 2012)

Likewise, the goal of IdeaKeeper is mainly to support learner, especially the ones in middle school, by providing scaffolding during their online inquiry process. This support is provided in four different fields; planning, searching, analyzing, and synthesizing. Basically, IdeaKeeper offers a structure for online search by outlining it

in these four fields. The tool presents a list of criteria to evaluate the reliability, usefulness, trustworthiness, validity and relevance of the information found online. According to the results of the study with the tool, the students who used it had a more successful research process, and they finished their assigned tasks in a shorter period of time. They also conducted fewer searches since they located the relevant information more easily and skipped fewer web sites. They had a higher level of cognitive activities, monitored their progress better, and they were more focused on the tasks.

It should also be noted that in some cases, this tool did not result in effective learning. For instance, Zhang (2013) observed that the 6th graders who used IdeaKeeper for an assigned task tended to make emotional evaluations of the websites they visited, and they made these judgements and evaluations too quickly which supports the first problem Zhang and Quintana (2012) puts forward about online inquiry processes. Their judgements relied on their first impressions of the websites, and these were self-repeating judgements, which is again a piece of evidence for Zhang and Quintana's (2012) claim for the second problem. This should not mean that IdeaKeeper is not beneficial for learning. In most of the studies, the use of this tool resulted in significantly better performance in the online inquiry. However, age might be a factor in making the best use of such a tool.

2.1.3.2 Online inquiry tool - OIT
Coiro, Kiili, & Hämäläinen (2016) also studied on the students' online inquiry problems and developed OIT (Fig. 2) to improve learners' online reading comprehension skills, based on four theoretical assumptions: i. Online reading is a problem-based inquiry process, ii. Argumentation has a significant role in deep

understanding, iii. Cognitive load causes loss of information, and iv. Providing

particular guidance to the learners help them construct, examine, and manipulate

different representations of knowledge, as established in Suther's (2003) theory of

representational guidance.

Fig. 2 Screenshot of OIT interface (Kiili, Coiro, & Hämäläinen, 2016)

As discussed earlier, research has revealed it can be challenging for learners

to locate, evaluate, compare, contrast, and integrate the ideas they read on different

websites. They can also struggle during argumentation, more clearly, they may not

be able to identify the arguments or analyze them successfully or take counter

arguments into account and give enough consideration to opposing points. To make

the argumentation process achievable, OIT consists of various sections called claim,

perspective, reasons for the claim, and reasons against the claim, synthesis, and

notes. It is designed to enable the learner to search for and identify the relevant information, organize, and support the claims by encouraging the learning to question the trustworthiness and reliability of the sources.

According to the results of a pilot work (Coiro, Kiili, Hämäläinen, Cedillo, Naylor, O'Connell, & Quinn, 2014), teachers and students find the OIT useful in terms of synthesizing findings gathered by interacting with information from numerous web pages, by prompting users to differentiate the pros and cons of different perspectives. The tool also allowed students to make an easier transition from online reading to writing by helping them see different perspectives of the same issue.

2.1.3.3 Assessing online reading comprehension: the ORCA Project

Readers on the Internet usually deal with the online material superficially (Zhang & Quintana, 2012), and they seem to skip among the information available without any action plan (Coiro & Coscarelli, 2014). They rarely question the information on the Internet and tend to think the more information there is, the better the quality. Coiro and Coscarelli (2014) carried out a study with seventh graders to identify the criteria they use to evaluate the information found on the web, and the types of evidence they put forward to justify their reasoning. The findings showed that most of the students had difficulty justifying their arguments about the reliability of the web sites. Instead of dealing with credibility, they mostly dealt with the content relevance, and they did not pay enough attention to the authors of the webpages and what words and images were selected in creating the web pages. Additionally, they struggle while trying to critically evaluate the quality and the reliability of what they come across on the Internet (Coiro, Coscarelli, Maykel, & Forzani, 2015; Walraven et al., 2008) which is

also in agreement with the second problem Zhang and Quintana (2012) put forward. Learners have difficulties while locating the relevant online information due to the lack of necessary skills (Guinee, Eagleton & Hall, 2003). Coiro & Dobler (2007) add that in order to actively construct meaning, readers should apply comprehension strategies in printed text-based environments; however, little is known about how learners use those comprehension strategies when it comes to online environments. Therefore, the ORCA Project (Fig. 3), developed by Coiro et al. (2014), was based on the discovery of types of strategic knowledge necessary to locate, comprehend, and use the information found on the Internet. They state that readers should be encouraged to engage more actively and to construct their own reading paths in online reading environments.
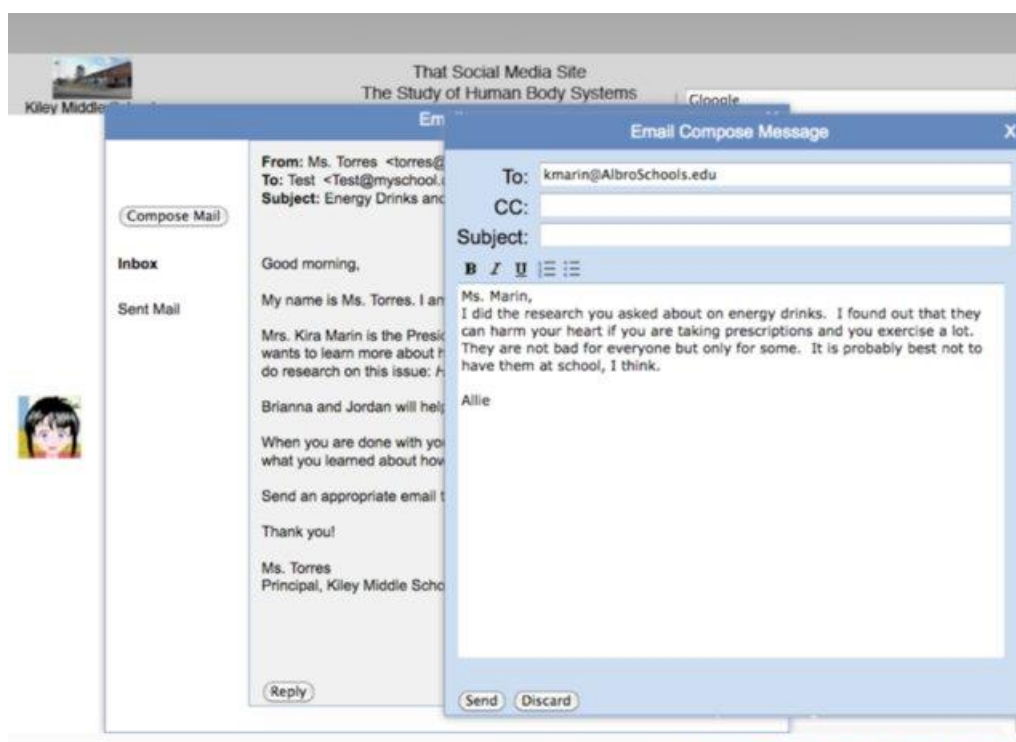
Fig. 3 Screenshot of the ORCA Project interface (Coiro et al., 2014)

The ORCA project is developed to measure online reading comprehension and built around a problem-based scenario with a series of requests from the readers while reading online. The target group of this project is middle school students and it is designed to help them develop common K12 English Language, Arts, and Math (Coiro, 2011) skills, aligned with Common Core State Standards (www.orca.uconn.edu).

2.1.4 Reading and learning from multiple texts

Reading and understanding multiple sources is one of the most significant demands of the twenty-first century to prepare students for the necessities and realities of today's society, which requires us to access different types of information online (Lawless, Goldman, Gomez, Manning, & Braasch, 2012). There is also an increasing need for critical evaluation of web sources (Britt & Aglinskas, 2002; Rouet, 2006; Wallace, Kupperman, Krajcik, & Soloway, 2000). Since online sources are almost always multiple, it is vital to be able to read multiple sources of information (Goldman, Wiley, Graesser, Sanchez, Ash, & Hemmerich, 2009). In multiple texts, each text has its own author, purpose, references, audience, context, publication date and place. Consequently, the readers need to resolve the differences among the texts to be able to have a unified, meaningful structure and coherence (Lawless, Goldman, Gomez, Manning, & Braasch, 2012).

Readers are required to fulfil five processes for online reading comprehension; i. being engaged with scientifically oriented questions, ii. providing evidence to answer questions, iii. generating explanations by using the evidence; iv. relating these explanations to the scientific knowledge, and v. justifying them (Bransford, Brown, & Cocking, 2000).

Do these processes show any differences while learning from single or multiple texts? Primarily, both types of learning require the readers to make connections between ideas within a text by using their prior knowledge; they are active in the construction of model representation (Coté, Goldman, & Saul, 1998). However, readers of multiple texts must make such connections among many sources of information that they can manage this integration and avoid surface-level connections, which are less possible when dealing with only one text (Wiley, Goldman, Graesser, Sanchez, Ash, & Hemmerich, 2009). Consequently, reading online multiple texts mostly demands more comprehensive and elaborate comprehension skills and strategies.

Reading from multiple sources has certain and specific goals such as reading the texts closely, and appropriately for the discipline of the task; synthesizing various aspects of the texts; constructing arguments by providing support and evidence; constructing arguments by providing support and evidence; organizing them logically and clearly; having specific criteria to judge the claims and arguments; expressing how the evidence supports the claims by applying the criteria for logic, evidence and claims, and showing understanding for the nature of knowledge, its construction and the relevant discipline (Wiley, Goldman, Graesser, Sanchez, Ash, & Hemmerich, 2009).

2.1.4.1 Good reader and poor reader

Multiple studies indicate that good readers use strategies such as thinking about the topic, monitoring text comprehension, planning or moving back and forth through the text more frequently than poor readers (Block, 1992; Brown, 1980; Carrell, 1989; Carrell, Pharis, & Liberto, 1989; Paris & Jacobs, 1984; Wilhelm, 2001). They tend to

be more qualified to make relevant connections between the task topic and online information source (Goldman, Braasch, Wiley, Graesser, & Brodowinska, 2012). In a study with undergraduate students, Wiley et al. (2009) investigated the differences between more successful and less successful readers in terms of achieving reading goals from multiple texts, judging the quality of the online sources, making sufficient references to the quality of these sources, and judging the quality of the essays written by their peers. The results showed that more successful readers had fewer difficulties while articulating their judgements about the credibility of the sources. They ranked the websites more correctly as reliable as opposite to unreliable (Wiley, Goldman, Graesser, Sanchez, Ash, & Hemmerich, 2009).

Another study by Goldman et al. (2012) supports the idea that better readers are better at sense-making, self-explanation and comprehension processes online. They worked with 34 students from a public university using a think-aloud protocol methodology. The students were asked to write an argumentative essay on "What caused the eruption of Mt. St. Helens volcano?" using seven websites in the Google search engine. While they were searching online, they were asked to think out loud. The results indicated that the ability to discriminate reliable sources from unreliable ones was higher for better readers, who provided more navigation statements on reliable sources. The number of students who completely read the web pages was higher for better readers, who were more strategic, and paid more attention to the credibility of the sources. Wiley et al. (2009) recognize that more successful readers can locate arguments and explanations and interact with the texts more effectively while reading from multiple texts. They can connect their ideas better and use a range of strategies to understand what they are reading. Goldman et al. (2012) also show that higher performers of reading are better at discriminating relevant

information from irrelevant ones, and they do this in less time than lower performers of reading.

Less successful readers tend to make more surface level connections among ideas while reading from multiple types of sources (e.g. words, concepts, genres, text structures), they mostly paraphrase or retell the same information instead of explaining the ideas in the text (Coté, Goldman, & Saul, 1998; Magliano & Millis, 2003; O'Reilly & McNamara, 2007).

2.2 Reading skills in English language learning

Learning a foreign language makes reading one of the essential skills because sense make largely depends on literacy input on the account of lacking conversational cues (Cummins, 1991; Eskey, 2005).

The act of reading has been defined by Goodman (1995) as a psychological meaning guessing game, while Ransom (1978) theorizes reading as a conversation between the reading and the writing person. Allan and Bruton (1998) see it as a complicated process of active meaning making from a text for different purposes. Overall, reading is considered as an interactive process, which means that learners use sub-skills to understand what is read, such as prior knowledge, their understanding of text schema, real-world knowledge, or first language-related knowledge (Grabe, 1991).

Language learners are active participants during the reading process and it asks for adopting various reading strategies while they are engaged with reading both online and static texts (Park & Kim, 2011; Dreyer & Nel, 2003; Coiro, 2003; Elshair, 2002; Foltz, 1993; Hsieh & Dwyer, 2009; Huang, Chern, & Lin, 2009). Those reading strategies facilitate EFL reading comprehension and help to learn (Anderson,

1991; Brantmeier, 2005; Oxford & Crookall, 1989; Sheorey & Mokhtari, 2001). Solak and Altay (2014), for instance, tried to find out the most and the least common static text reading strategies and the results showed that most of the participants preferred to use problem-solving strategies. Also, there was a moderate awareness of every possible strategy that can be used while reading. The most remarkable strategy used was underlining or circling in the text to remember the information later. The learners carefully read the texts several times when the content got difficult. They started with a purpose for reading, and bold or italic text signaled the words or key information. To be able to see the connection between the ideas in the text, readers sometimes had to go back and forth (Solak & Altay, 2014).

2.2.1 Online reading strategies for ELL readers

Although technology integration has positive implications for EFL/ESL reading comprehension skills, additional strategies are still required to handle specific aspects of reading online (Park, 2012; Park & Kim, 2011; Elshair, 2002; Foltz, 1993; Hsieh & Dwyer, 2009; Huang, Chern, & Lin, 2009). This unlimited nature of online reading environment might cause ELLs to have problems such as cognitive overload, disorientation, inconsistency or weak motivation (Heller, 1990; Hammond, 1989). In order to use these additional strategies effectively, ELLs need the knowledge and experience of computer literacies that would enable them to actively and proficiently read online texts (Park & Kim, 2016).

Along with the additional strategies required by the online reading process, second language (L2) readers may also use their paper-based text reading strategies for online reading which is also a probable case in first language (L1) online reading process (Elshair, 2002; Anderson, 2003; Hsieh & Dwyer, 2009).

21

To illustrate, a study by Park, Yang and Hsieh (2012) with college-level EFL learners showed that they used their prior knowledge of both online and static text structure. Another study by Park and Kim (2011) supports this finding by showing some evidence for EFL learners who used two online and seven paper-based reading strategies during their online reading processes. In Park and Kim (2011)'s study, the participants' use of the computer mouse to point to the text they were reading on the screen and highlighting sentences to focus were similar to the behavior of a reader who is reading a printed book.

Numerous findings suggest the idea of ELL readers using paper-based reading strategies for online texts, but what are the additional strategies they need to use to fully comprehend those online texts? According to studies carried out to identify these specific strategies adopted by ELLs, some of the additional strategies are navigating and evaluating the texts, using sitemaps and other signals (titles and nodes), monitoring problem-solving processes in hypertexts, using prior knowledge, and computer literacy (Park & Kim, 2016; Elshair, 2002; Foltz, 1993). When ELLs encounter unfamiliar English words in online texts, sometimes they need to infer word meanings from the context and draw conclusions (Kenne & Zimmermann, 1997). Their level of prior knowledge can be useful in predicting the meaning of these unknown words, in addition to the presentation of information in multiple types of representation, such as images and videos (Park & Kim, 2016). During online reading, ELLs may have connections between the text and their prior knowledge or world knowledge, and between the text and the other texts they know such as multimedia sources. These connections are called intertextuality (Hartman, 1995; Loeb, 2002). They monitor their understanding process continually by making

decisions or searching the keywords and evaluating the credibility of the content by sticking to their reading purposes (Kim, 2011; Kenne & Zimmermann, 1997).

There are also studies which attempt to categorize these specific strategies as metacognitive, problem-solving, local, global, inferential reasoning, socio-affective and supporting strategies. To illustrate; Huang, Chern, and Lin (2009) indicate ELLs employ a wide variety of reading strategies crucial in terms of reading comprehension (Anderson, 1991; Block, 1986; Chang, 1998; Huang, 1999; Shen, 2003) and they classify them under two categories as top-down strategies (general or global) such as previews, keywords, outlines, and predictions and bottom-up strategies (problem solving or support) such as summarizing, reading speed, using semantic mapping tools and text-to-speech software (Block, 1992; Cheng, 1998; Sheorey & Mokhtari, 2001). Top-down strategies are mainly planned by the reader to monitor the reading process, such as thinking about a reading purpose, evaluating the relevancy, planning the reading paths, paying attention to the texts' length or organization. Bottom-up strategies, on the other hand, are the decisions made while the readers are directly engaged with the text, such as guessing the meaning from the context, adjusting the rate of the speed, information visualization, using glossaries or dictionaries, highlighting or rereading the lines, and translation from L2 to L1 (Huang, Chern, & Lin, 2009). Huang et al. (2009) investigated two other reading strategies: "support strategies (using online dictionaries, online grammar sources, an online translation mechanism, online highlighters and notebooks), and socio-affective strategies (online chat rooms, discussion boards, email services, music boxes)" (p. 15).

The fact that these strategies tend to show differences has been shown by research. For instance, the most frequent strategies used by ELLs in a study about

online reading by Anderson (2003) were rereading, pausing to think, and adjusting the reading speed, which is generally called problem-solving strategies. In the same study, it was found that questioning the text, taking notes and translating into first language were the least frequent strategies employed. In addition to those strategies, the participants in his study adjusted their reading speed depending on the text they were reading. They also made use of the inferential reasoning strategies as L1 speakers do in online reading, such as referring to the pieces of their prior knowledge, self-regulated reading processes - plan, predict, manage, and evaluate (Coiro & Dobler, 2007).

Another study which provides some evidence for different online reading strategies preferences is by Huang et al. (2009) which proposes that supportive strategies are used most which is followed by global strategies, social-affective strategies; and lastly problem-solving strategies. Additionally, ELLs are observed mostly to rely on supportive elements such as online dictionaries, highlighting, translation, or glossaries. This study also indicates that the use of global strategies and support strategies result in higher recall scores. The reason for problem-solving strategies being the least favorite in this study might be because of a great deal of effort necessary for engaging with the text by constructing semantic maps, reading aloud or rating reading speed (Huang et al. 2009).

Huan et al. (2009) carried out a study investigating the effect of EFL learners' strategy choice on their reading comprehension. They created a web-based reading program and the participants were asked to read four online texts. The results noted that most of the participants applied supportive strategies, such as using translation, highlights, glossaries, and dictionaries. Accordingly, Akyel and Erçetin (2009) examined L2 reading strategies of college-level EFL learners, and according to the

results, learners consulted online glossaries, which helped them handle their insufficient prior knowledge. They studied the online glossary use of 10 advanced level ELLs who were undergraduates through a think-aloud procedure. The ELLs were assigned reading tasks in an online text enhanced by a glossary. When the participants were asked to comment on the usefulness of the glossary for reading comprehension online, they declared that the glossary was essential for comprehension of the text and that it increased their motivation for reading since it enabled fluent reading. In addition to glossary usage, the other most frequently used strategies were relying on background knowledge, referring to the annotations, and questioning and paraphrasing in their L1, which are all cognitive strategies. The participants also used metacognitive strategies, such as evaluating the relevancy and validity of the information and commenting on their behaviors and reading processes. The strategies used the least were rereading, paraphrasing in L2, inferring the meaning of a word from the context, and skimming. One reason might be the implication of the glossary for online text input since it provides the readers immediate and easy access to the meaning of an unfamiliar word encountered (Chun, 2001). Akyel & Erçetin (2009) noted that this is one significant difference between online and offline text reading, because guessing the meaning of an unknown word is a common strategy during offline reading, instead of checking it up in a dictionary.

The results of Konishi's (2003) study carried out by Japanese ELLs also supports previous findings stating that learners' preferences for online reading strategies differ since most of the participants in this study used local strategies, such as commenting on the word meaning, grammatical interpretation, and global strategies, such as using background knowledge and inferring meaning. He defines local strategies as commenting on the meaning of words while the global ones are

defined as using prior knowledge, and evaluation of external online sources (Park, Yang, & Hsieh, 2014). In his study, L2 readers also used metacognitive strategies such as goal setting for reading, revision of their strategy use, and monitoring text comprehension. In a study carried out with college level ELLs, Hsu (2007), for instance, found the most commonly used type of strategy was metacognitive strategies followed by social and affective ones.

2.2.2 Self-regulated L2 reading patterns

As discussed above, since online texts consist of multiple layers of nonlinear information, reading online requires readers to plan, predict, monitor, and evaluate the online material in a recursive process (Coiro & Dobler, 2007), as shown in Fig. 4.

Primarily, online readers need to plan what they are going to read in order to find the information required. In a study with L1 readers, Coiro and Dobler (2007) demonstrate that all the participants set a reading purpose and planned their reading process. In Park and Kim's (2011) study, the participants also planned how they would complete the task and thought about their reading purposes.
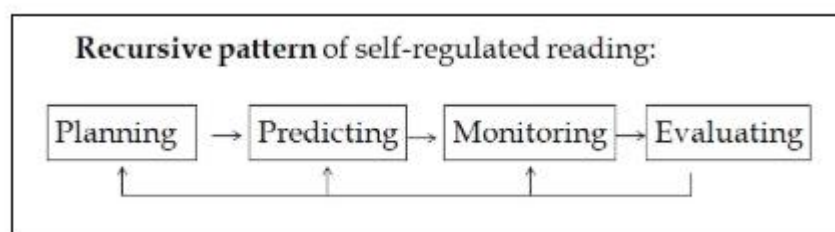

Fig. 4 The recursive pattern of self-regulated reading (Coiro & Dobler, 2007, p. 235)

While navigating among webpages, online readers are also required to make predictions about what information each web page may contain, or where the pages

26

may lead the readers. Additionally, while making these predictions, they need to determine what to read before they read the full text; in other words, they need to preview. According to McNamara et al. (2007) previewing is one of the most important pre-reading strategies, since readers can quickly get a grasp of the information. Since the participants in Park & Kim (2011) were ELLs, they also applied to mean inferring strategies when they came across an unfamiliar word. According to Richards and Anderson (2003), inferring is a process to predict and assume based on the given information, and it depends on the readers' text comprehension (Oakhill & Cain, 2007). The participants in Park & Kim's (2011) study used prior knowledge to infer meaning, in addition to consulting pictures and videos. However, being able to infer the meaning and make predictions, a certain level of information about website structure is required (Park, Yang, & Hsieh, 2014). Readers need information relevant to their inquiry, and in order to eliminate the irrelevant information, they should monitor their comprehension of the online information all the time. They would also have to evaluate the credibility and trustworthiness of the information they gather online (Leu et al., 2011).

Chang (2005) studied self-regulated reading as four stages, namely planning, predicting, monitoring, and evaluating. The results showed that these stages are effective in assisting students to read in web-based environments. He claims that self-regulated reading can make students more responsible for their reading process, it also has positive effects on academic achievement and motivation for both low and high proficiency learners. These four stages of self-regulated reading are observed in both L1 reading and L2 reading. When ELLs do not find accurate information, they go back to the previous stage, and use other search engines or explore different web pages looking for more accurate information (Fig. 5). Thus, it is a recursive process.

However, unlike reading in L1, ELLs navigate between dictionaries and glossaries, or other websites, particularly designed for learning the target language (Fig. 5). The ELLs go back and forth and sometimes visit more than one dictionary websites to verify the meanings of the words. They also use L1 websites for triangulation (Fig. 5). Another difference is that they receive help from their L1 while they are synthesizing the information found on the web pages (Chun, 2011; Grabe, 2009).
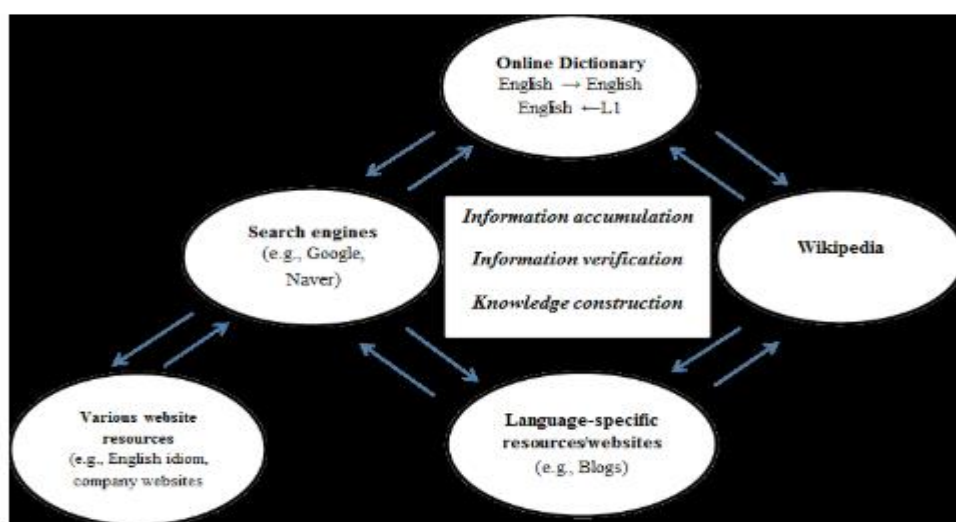
Fig. 5 Construction of L2 web of knowledge (Park, Yang, Hiesh, 2014)

2.2.3 Good ELL reader and poor ELL reader

Good and poor readers of L1 can adopt different online reading strategies based on their level of reading and comprehension skills. It is safe to assume this to be the case for EFL online readers as well. Several studies point out the use of unique strategies by ELLs learners with different language proficiency levels (Akyel & Erçetin, 2009; Huang, Chern, & Lin, 2009; Konishi, 2003; Park & Kim, 2011; Huang, 1999; Shen, 2003; Yang, 2002; Hsu, 2007). For instance, by keeping the meaning in mind good EFL readers can connect the meaning with their own ideas or eliminate the unneeded ones more effectively. Poor readers, on the other hand, may lose the meaning they

drove from the text and how ideas are connected, thus may possibly spend undue amounts of time processing irrelevant parts of the text (Anderson, 1991; Brantmeier, 2005; Hosenfeld, 1977; Block, 1986, 1992; Sheorey & Mokhtari, 2001).

Sarıçoban (2002) investigated the English reading strategies which good ELL readers use during pre-reading, reading and post-reading process in a state university EFL department. The results showed that good readers used mostly global reading strategies and later those readers moved to smaller units of the text, such as words and sentences. These results also support Huang's (1999) study claiming that high proficient readers used global strategies more frequently than low proficient readers; while the latter group employed local strategies more often. In Hsu's (2007) study, he also observed that good readers of EFL used more specific kinds of strategies compared to poor readers.

Another study by Huang, Chern and Lin (2009) showed that high proficiency readers tend to use global strategies more often, to get a general understanding of a text and plan their reading path. However, low proficiency readers are more likely to employ socio-affective strategies, such as chat rooms or music boxes to reduce their anxiety. Accordingly, high proficiency readers employ more global strategies while they are dealing with a more complex and difficult text; while it is usually local strategies for low proficiency readers (Huang, 1999; Shen, 2003) Another study by Huang (1999) also noted that high proficient readers used more self-monitoring strategies while they were processing text, which indicates that different proficiency levels require different strategies (Anderson, 1991).

The difficulty level of the text also affects the strategies being used. For instance; in a study by Shen (2003), two groups of students with low and high language proficiency were given various online texts with different difficulty levels.

When the text was too difficult, high proficient readers used more sophisticated metacognitive strategies in order to handle the text better; whereas low proficient readers tended to escape from the text and ignore the reading problems they encountered, because they were not able to understand the text which was above their language knowledge.

2.3 Research questions

The following are the main research questions for this study.

1. To what extent does the use of an online inquiry tool facilitate performance of EFL learners on an information synthesis task in English?

   1.1. Are the writing performance scores of EFL learners who use the OSFT significantly different from those of the EFL who use a basic search tool?

   1.2. How did the experimental group report their use of the OSFT?

2. Is there a significant relationship between EFL learners' writing performance scores on the information synthesis task in English and their online reading habits in English?

3. To what extent does the learners' evaluation of their own online search skills correlate with their writing performance scores?

CHAPTER 3

METHODOLOGY

This chapter talks about the design and data collection procedures at the study with the details about the OSFT, hypotheses of the study, data collection, data coding, and data analysis.

3.1 The design of the study

This is a quasi-experimental study where intact groups were assigned to the experimental (N=28) and control (N=28) groups. The experimental group (called the maximals) received scaffolding by engaging with the OSFT, while the control group (called the minimals) used a basic search tool without any scaffolding. The study involves the comparison of two groups of students from maximals and minimals.

The dependent variable of the study was both groups' online information synthesis task scores. The independent variable was the OSFT. The study was planned as one session which lasted one hour. The reason for allocating one hour was the fact that the other tools such as IdeaKeeper or OIT were engaged within 45 minutes by native speakers of English. Since the participants in this study were nonnative speakers of English who were supposed to complete an online information synthesis task in English, the time for the study got lengthened.

At the end of the study, both quantitative and qualitative data were collected and analyzed.

3.2 Participants

The data for the study were collected from 56 college students who are learners of EFL in a preparatory class at a public university in Istanbul. The students' level of English is Pre-Intermediate, and they speak Turkish as their first or second language. Since they are in the same language level classes, their English language skills, and accordingly their reading skills and reading strategies in English are assumed to be close enough to each other. There were 21 female and 35 male participants, and the age range was 18-25. The students' areas of study varied from Electrical and Electronics Engineering, Chemical Engineering, and Economics to Guidance and Psychological Counseling, Political Science and International Relations, Preschool Education, Psychology, and Management.

3.3 Procedure

The students in the study were assigned an individual online task, which required them to carry out an online search to answer an argumentative question that they selected among 6 questions presented at the beginning of the task. The students were asked to use the Google search engine to find 3 different web pages to answer the question they selected. The maximals accomplished this task using the OSFT (Çevrimiçi Arama-ve-Bulma Aracı – ÇABA, Appendix A), which was designed and developed by the researcher to provide guidance in online inquiry tasks. The minimals, on the other hand, was assigned the same task but they used a simpler version of the OSFT (Appendix B), which only consisted of basic instructions to carry out the task.

The online search task requires the participants to choose one question, locate the keywords to search online, decide which web pages to use, critically evaluate the

information from different web pages, make connections among them, and finally write a short report by showing evidence from the three web pages they read. The previous studies with other tools such as Ideakeeper and OIT asked the participants to use three web pages, as well. The questions in the task are determined such that they cannot be answered without visiting several different web pages; in other words, it is unlikely to find a quick answer to any one of them. The following were the questions the students were asked to choose from. They were created by the researcher with the concern of forming almost equally challenging, demanding, and interesting questions.

1. How likely is your cryptocurrency (Bitcoins) to be hacked?

2. Where can nanotechnology be used? Can it be used in everyday life? In what ways?

3. If Mars colonization becomes real, how will it affect the economy on Earth?

4. Apple's iPhone– Why is it so popular? What makes it so special?

5. Why is social media so popular? Should we be concerned?

6. Why do well-known companies such as Pepsi or Starbucks shift their strategies toward being healthy and environmentalist?

After the participants complete a task, the maximals were asked to fill out a user interface questionnaire about the OSFT. Before the online information synthesis task, both groups were given Online Reading Habits Survey in Turkish (Appendix C for English version, Appendix D for Turkish version) to collect information about their reading habits online in English, which also included demographic questions. Then, Online Information Search Strategy Inventory (Appendix E for English version, Appendix F for Turkish version) was conducted in Turkish by all the participants.

The necessary approval for both Online Reading Habits Survey and Online Information Search Strategy Inventory was received from ethical approval of the INAREK/SBB Ethics Sub-Committee (Appendix G).

3.4 Online search-and-find tool - OSFT

The OSFT is designed and developed by the researcher in Articulate Storyline 2 to help ELLs in online inquiry tasks, based on the four phases of online inquiry process. This tool is based on a learner-centered design which aims to scaffold the students during planning, information search analysis, location, evaluation, synthesis of information, communicating (Quintana et al., 2004; Zhang & Quintana, 2012). Its design is guided by previous research findings on the problems that students face during online inquiry both in their L1 and L2. In the maximal support version of the tool, there are four different sections to support the online inquiry phases: locate, evaluate, synthesize, and communicate. These online inquiry phases require learners effectively read online, evaluate the reliability of information, make claims, use evidence from multiple texts, have access to credible information, and organize it for communication (Coiro & Kennedy, 2011). The questions and the instructions in each phase was partly adopted from the previous tools whether fby changing the wordings or using them as they were (IdeaKeeper, OIT, and The ORCA Project), while the rest was created and added by the researcher to adapt the tool for university level ELLs. For each question and instruction in the OSFT, the feedback was received from the instructors of all participants and the revision was applied accordingly.

In the Locate phase of the maximal support version of the OSFT, the students are required to plan their web search process, decide the steps to be taken, think about

their driving question and what they are required to know to answer it. Therefore, in this section, these questions and instructions were provided:

1. Choose only one question (among six).

2. What is your question (in your own words)?

3. What other questions should you ask to answer your main question?

4. How much do you already know about this topic?

5. How much are you interested in this topic?

6. What keywords do you need to search on the Internet? (Write at least 5 keywords)

7. Now use Google Search Engine and look for answers to your main question by using 3 different web pages.

In the Evaluate phase, the students are asked to do the following for each of the three web pages.

1. What does this web page say about your question?

2. Please copy and paste relevant sentences from this web page for your main question.

3. Does it help you answer your question? (Explain shortly)

4. What did you learn from this web page?

5. This web page is: relevant, up to date, credible, subjective, hard to read, helpful (Likert Scale)

After students complete this process for each web page, in the Synthesize phase, they are asked to synthesize and prepare their answer for Communicate phase. The following are the questions and instructions used in these sections.

1. List the expressions and the phrases you have learned from three web pages. (Synthesize)

2. Did you find your answer to your question? Summarize very shortly your findings by using information from 3 different web pages. Summarize their findings. (Synthesize)

3. Report your findings by using the information from three web pages in a short paragraph (minimum 150 words). (Communicate)

The simpler version of the OSFT used by minimals presented the same six driving questions as those in the maximals' OSFT, but it did not include the Locate, Evaluate, Synthesize, and Communicate phases. The tool used by minimals provided only the following five pieces of questions and instructions:

1. Choose only one question (among six).

2. What is your question (in your own words)?

3. Now use Google Search Engine and look for answers to your main question by using 3 different web pages.

4. Now copy and paste three web pages below. Put comma (,) between each web page.

5. Report your findings by using the information from three web pages in a short paragraph (minimum 150 words).

3.5 Data collection instruments

3.5.1 Screen capture and user data

During the study, both the maximals' and minimals' screens were recorded by Articulate Storyline 2 Record Screen as they searched online. The first aim was to

identify whether the amount of the guide made any difference for the maximals. The second aim was to see whether the maximals used the tool as intended and answered the questions or followed the instructions appropriately. And the third aim was to understand how both groups' participants completed the online information synthesis task.

3.5.2 Demographics and online reading habits survey

Before the online task, all participants were given a survey asking about their reading habits online and self-evaluation of their Internet use in English in order to gather information about how much time they spend online, what they do when they are online, how much time they spend reading online, the reasons for reading online and lastly the problems they encounter during reading online.

An independent samples *t*-test was conducted to test for the means of maximals (*M=57.25, SD=11.71*) and minimals (*M= 57.61, SD=8.53*) in terms of their online reading habits. Results showed that there is not a significant difference (see Table 1). Therefore, both groups' online reading habits were assumed equal.

Table 1. Independent Samples T-test for Online Reading Habits

	Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
3.19	.07	.13	56	.897	.357	2.73	-5.13	5.84

There was a part of the demographic questionnaire tallied for gender and age in the Online Reading Habits Survey. Additionally, it included two open-ended questions:

1. How often do you read in Turkish on the Internet during the day?

2. What do you read in Turkish on the Internet? Write.

According to the answers of the questions, most of the participants in both groups averagely spend four to five hours online a day and they mostly read about the news, social media, book reviews, and their hobbies and interests which also can support two groups' equal online reading habits.

3.5.3 Online information search strategy inventory

The two groups of participants were also asked to fill out the Online Information Search Strategy Inventory (Aşkar & Mazman, 2013) in order to gather data about their assessment of their own web search skills before the online task. An independent samples t-test was conducted to test for the means of maximals ($M=$ 113.64, $SD=$ 17.51) and minimals ($M=110.75$, $SD=13.726$) in terms of their online information search strategy. Results showed that there is not a significant difference (see Table 2). Therefore, both groups' online information search strategies were assumed equal.

Table 2. Independent Samples T-test for Online Information Search Strategy Inventory

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
	F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
	2.31	.13	.68	56	.494	-2.89	4.20	-1.32	5.53

3.5.4 User Feedback Questionnaire

The maximals were asked to fill out a user feedback questionnaire (Appendix G for English version, Appendix H for Turkish version) to see the users' assessment of the tool's effectiveness. The questionnaire contains questions about the efficiency of the tool in searching and finding online information, whether it is helpful in finding the answer, and the clarity of the instructions and the questions, as well as the user-friendliness of screen design. The necessary approval for User Feedback Questionnaire was received from ethical approval of the INAREK/SBB Ethics Sub-Committee (Appendix G).

3.6 Data coding

Firstly, both groups' screen records were examined to match each participant's answer to the questions in the OSFT since Articulate Online records user data alphabetically, as a result of which individual input is mixed with the rest entered in the same field. The screen capture was also used to confirm whether the participants used 3 different web pages as instructed.

The data collected from both groups were coded to identify what types of web pages they chose, whether they paraphrase their findings or directly copy and paste, and how they decide whether the page is credible and reliable. The participants' own evaluations of each website in terms of credibility, relevance, currency, objectivity, difficulty and helpfulness were examined.

Additionally, maximals' responses in each phase in the OSFT (locate, evaluate, synthesize, and communicate) were examined to determine whether they answered the questions and followed the instructions appropriately. The aim was to identify the maximals' self-regulated reading patterns (locate, evaluate, synthesize, and communicate) which were not included in the simpler version of the tool used by the minimals. For open-ended questions, the answers were analyzed in terms of whether the questions were answered as intended which gives an insight about how clear the question was. For "Yes" and "No" questions, the answers were analyzed in terms of whether the participants said "Yes" or "No" to these questions.

3.6.1 Surveys and questionnaires

The data gathered from Online Reading Habits Survey Online Information Search Strategy Inventory and User Feedback Questionnaire which was only given to the maximals were scored quantitatively.

The maximum number of points a respondent might get from Online Reading Habits Survey was 90, for Online Information Search Strategy Inventory it was 150, and for User Feedback Questionnaire it was 60. The participants' responses were added up to compute a score for each participant.

There were several items that were reverse coded since the negation and the negative meaning implied within these items asked for reversion to be able to get

calculated with the rest. For Online Reading Habits Survey nine items, for Online Information Search Strategy Inventory five items, and for User Feedback Questionnaire one item were reversed.

3.6.2 Scoring writing in the online inquiry task

The students in both groups composed a short report at the end of the online inquiry. These were scored for the number of idea units included in each text, correct use of terminology (clarity), and the extent to which the answers were copied and pasted (own answer). The number of words (word count) was also counted.

Scoring of idea unit and terminology were based on a list of possible answers for each of the six areas of search presented in the OSFT: Bitcoins, nanotechnology, Mars colonization, I-phone, social media, and green marketing. The answers for idea units were collected from various online resources on the topics questioned, which were affirmed by subject experts. A pool of idea units was compiled, each representing a possible answer. The list was extended with more idea units derived from participant responses. Student responses were scored in terms of how many idea units they included. Each idea unit was given two points. Additionally, one more point was given if the student provided an example of an idea unit. The more idea units there were, the richer the answer was.

Terminology was the criterion for assessing the quality of participants' written answer, a list of possible terms and concepts compiled from various online resources participants were thought likely to visit. During the scoring process, it was occasionally updated based on student responses. Each terminology was given one point.

Participants were also asked to provide their own version of an answer (own answer) to the driving question they selected, in the related section of the OSFT as an indicator of their information synthesis. For the sake of scoring, each participants' video recordings in both groups were examined to decide whether they solely copied and pasted (one point), partly copied and pasted (two points), or wrote the whole answer with their own words (three points).

In terms of word count, the minimum number of words is recommended to be 150 to assess writing (Hughes, 2003). Therefore, the threshold for a satisfactory piece in the writing task was assumed to be 150 words.

The scores of the two groups were compared in terms of idea units, terminology, own answer and word count quantitatively. The scores from the writing task were correlated with Online Reading Habits Survey and Online Information Search Strategy Inventory for any relationship that may exist.

3.7 Data analysis

In this section, the process of analyzing the quantitative data will be discussed.

3.7.1 Idea unit, clarity, word count, and own answer

Independent samples t-test was conducted to compare the two groups' scores on idea units, correct use of terminology, word count and own answer.

Bivariate Correlation was applied to see if there were any significant correlations between the results of the Online Reading Habits Questionnaire and the scores from the idea units, terminology, word count, and own answer. The same analysis was also applied to see any correlations between these four variables for both groups and the results of the Online Information Searching Strategy Inventory.

Additionally, the idea unit scores of the participants who solely copied and pasted their answers and who wrote the whole answer with their own words were compared by applying independent samples t-test to see whether there is a significant difference between the mean scores of both.

3.7.2 Surveys and questionnaires

The mean scores from Online Reading Habits Survey and Online Information Searching Strategy Inventory were compared to see whether there was a significant difference between the two groups by using independent samples t-test before the online information synthesis task.

The data from User Feedback Questionnaire were analyzed quantitatively and the descriptive results were examined.

3.7.3 Questions and instructions in the OSFT

Maximals' answers to the OSFT were analyzed by using content analysis and descriptive analysis. For the "Yes" and "No" questions, only descriptive analysis was applied. For the rest of the questions/instructions, the results of both content analysis and descriptive analysis were taken into consideration since the answers tended to vary depending on the driving questions and web pages chosen in the study.

3.7.4 Maximals' web page evaluations

In the Evaluate section of the maximal guidance version, the participants were asked to rate each website they used in terms of relevance, credibility, currency, helpfulness, subjectivity and difficulty. To score each participant's evaluation for the web pages, descriptive analysis was applied, and the results were examined.

CHAPTER 4

FINDINGS

4.1 The effects of the OSFT on online information synthesis

Before comparing the groups on the dependent measures, the distribution of each

measure (idea unit, clarity, own answer, word count) across the groups was examined

through Kolmogorov-Smirnov test in order to determine whether the distribution was

normal. The results showed that the scores were normally distributed for both groups

as can be seen in Table 3.

Table 3. Distribution of Scores at Idea Unit, Clarity, Own Answer and Word Count
for Maximals and Minimals

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Maximals						
Idea Unit	.149	28	.112	.911	28	.021
Clarity	.124	28	.200*	.940	28	.108
Own Answer	.359	28	.167	.694	28	.025
Word Count	.118	28	.200*	.960	28	.355
Minimals						
Idea Unit	.117	28	.200*	.960	28	.343
Clarity	.157	28	.075	.963	28	.418
Own Answer	.559	28	.183	.188	28	.032
Word Count	.123	28	.200*	.975	28	.712

Levene's Test for Equality of Variance was run before interpreting the results

of t testing. Because the significance values for idea unit ($p=.17$), clarity ($p=.35$),

own answer ($p=.03$) and word count ($p=.74$) were greater than .05 in Levene's test,

equal variances were assumed.

An independent samples t-test was conducted using a Bonferroni-corrected α

of .0125 (.05/04) to test for the means of two groups in terms of four dependent

variables. Results showed that only the word count differed significantly between the 2 groups (see Table 4).

Table 4. Comparison of Idea Unit, Clarity, Own Answer and Word Count Results for Maximals and Minimals

	Maximal (N=28)				Minimal (N=28)				
	Minimum	Maximum	Mean	SD	Minimum	Maximum	Mean	SD	t
Idea Unit	0	14	5.96	4.67	0	23	9.07	5.26	2.33
Clarity	0	12	5.5	3.6	1	17	8.14	4.01	2.59
Own Answer	1	3	2.54	0.79	1	3	2.	0.74	-0.17
Word Count	39	147	82.25	39.61	39	182	124.68	36.26	.18***

Note: * p< .05, ** p< .0125, *** p< .001

4.2 Maximals' reporting of their use of the OSFT

One aim of the OSFT was to provide scaffolding to the maximals and to analyze how they reported their use of the tool. In order to analyze the data, each participant's answers to the questions and the instructions in the tool were analyzed applying content and descriptive analyses.

According to the results, for Question 2, students varied in terms of the reason for choosing their questions. Most of the participants chose their questions because they thought it was interesting for them, and the most frequent second reasons were the easiness of and liking/loving the topic (see Table 5).

For Question 3 (What other questions should you ask to answer your main question?), all the participants could write sub-questions except one who stated not knowing any related sub-questions (96.42%). For Question 6 (What keywords do you need to search on the Internet?), all of them wrote keywords and although the tool asked for a minimum of five keywords, there were three participants who wrote

less than five (10.71%). On the other hand, 12 participants wrote more than five

keywords (42.85%). All in all, every participant provided related key words.

Table 5. Categories, Frequencies, and Percentages for the OSFT Answers (Q2)

Category	Frequency	Percentage
Being interested in the topic	8	28.57%
Easiness of the topic	6	21.42%
Liking/loving the topic	6	21.42%
Familiarity with the topic	4	14.28%
Caring the topic	2	7.14%
Being a popular topic	2	7.14%
Being willing to know the answer	1	3.57%
Being a favorite topic	1	3.57%
Being possible to search the topic	1	3.57%
Fun topic	1	3.57%
Being able to search about it	1	3.57%

For Questions 8, 14, and 20 (What does this web page say about your

question?); participants mostly could answer the questions appropriately since their

answers were related to their driving questions. In Question 8, except one participant

who stated not being able to find an answer to the question and two participants who

wrote irrelevantly, 89.28% of the participants could give pieces of evidence from the

web pages they studied through. In Question 14 and 20, except one participant

(different participants in each question) who only said the web page answered the

question, which was not the appropriate answer, the rest gave acceptable answers by

providing examples from the web pages (96.42% for each).

For Questions 9, 15, and 21 (Please copy and paste relevant sentences from

this web page for your main question.); each participant's video records were

analyzed in order to be able to determine whether they copied and pasted the online

texts from the web pages they used during the study. According to the results, except

Question 9 where three participants copied and pasted the link of the web page (89.28%), the rest of the participants could copy and paste the relevant parts to their questions from the web pages they used.

According to the results of "Yes" and "No" questions which are Question 10, 16, and 22 (Does it help you answer your question?), the participants mostly stated that they found answers to their questions and the web pages they used were helpful in that matter. For Question 10, only one participant said it helped too little and four participants said the web page did not help them find the answer at all which means 82.14% of the participants thought the web page helped them. For Question 16, only one participant misunderstood the question and wrote irrelevantly, there were three participants who said it help a little and four participants who said "no" which means 71.42% of the participants thought the web page helped them. For Question 22, except two participants who said "not enough" and "little" and three participants who said "no", 82.14% of the participants thought the web page helped them.

For Questions 11, 17, and 23 (What did you learn from this web page?); most of the participants' answered indicate that they think they learned about the answer itself. For Question 11, only two participants declared they did not learn anything from the web page and the other two participants stated they had already known the information on the related web page. For Question 17, all the participants thought they learned about the answer and no one answered as "nothing". For Question 23, four participants said "nothing".

The least appropriately answered question was Question 25 (List the expressions and phrases you have learned from three different web pages.). There were only six participants could write lists and expressions related to their questions and acquired from three web pages. The rest of the participants mostly provided

short summaries of their answers or declared they did not find anything new on the web pages (see Table 6).

Table 6. Categories, Frequencies, and Percentages for the OSFT Answers (Q25)

Category	Frequency	Percentage
Summary of the findings	16	57.14%
Expressions and phrases from the web pages	6	21.42%
Finding nothing related to the answer	2	7.14%
Pasting the links used	1	3.57%
Explaining the online search and find process	1	3.57%
Expressing the anxiety because of the study	1	3.57%

And for Question 26 (Did you find your answer to your question? Summarize very shortly your findings by using information from 3 different web pages.), there was one participant claiming the question does not have an answer at all and two participants stated not being able to find an answer to their question because of not having enough time and. All in all, 89.28% of participants believed they found an answer to their question and summarized their findings.

4.3 The relationship between online reading habits and writing scores

The data for Online Reading Habits Survey were analyzed first with Kolmogorov-Smirnov test. The results showed that the scores were normally distributed for both groups as can be seen in Table 7.

Table 7. Distribution of Scores at Online Reading Habits Survey for Maximals and
Minimals

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
	Statistic	df	Sig.	Statistic	df	Sig.
Maximals Online Reading Habits	.118	28	.200*	.973	28	.659
Minimals Online Reading Habits	.123	28	.200*	.973	28	.596

Levene's Test for Equality of Variance was run before interpreting the results

of the Pearson correlation *(r)*. Because the significance value for the survey was

greater than .05 in Levene's test (3.19), equal variances were assumed. There were

15 questions in the Online Reading Habits Survey. The descriptive statistics for four

dependent variables (idea unit, clarity, own answer, and word count) and online

reading habits scores can be found in Table 8.

Table 8. Descriptive Statistics for Four Dependent Variables and Online Reading
Habits Scores

	Minimum	Maximum	Mean	SD
Idea Unit	0	23	9.07	5.26
Clarity	0	17	8.14	4.01
Own Answer	1	3	2.50	.74
Word Count	39	182	124.68	36.26
Online Reading Habits	35	79	57.43	10.15

Pearson's Correlation Coefficient was conducted to measure the relation

between four dependent variables and Online Reading Habits Survey. The

correlations between the participants' idea unit $(r = -.08, p > .05)$, clarity $(r = .05, p$

$> .05)$, own answer $(r = .09, p > .05)$, word count $(r = .08, p > .05)$ and Online

Reading Habits Survey scores are statistically not significant.

4.4 The relationship between online search skills and writing scores

The data for Online Information Search Strategy Inventory were analyzed first with

Kolmogorov-Smirnov test. The results showed that the scores were normally

distributed for both groups as can be seen in Table 9.

Table 9. Distribution of Scores at Online Information Search Strategy Inventory for Maximals and Minimals

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig
Maximals Online Information Search Strategy Inventory	.089	28	.200*	.977	28	.778
Minimals Online Information Search Strategy Inventory	.135	28	.200*	.960	28	.335

Levene's Test for Equality of Variance was run before interpreting the results

of the Pearson correlation *(r)*. Because the significance value for the survey was

greater than .05 in Levene's test (2.310), equal variances were assumed. There were

25 questions in the Online Information Search Strategy Inventory. The descriptive

statistics for four dependent variables (idea unit, clarity, own answer, and word

count) and online online search skill scores can be found in Table 10.

Table 10. Descriptive Statistics for Four Dependent Variables and Online Information Search Strategy Inventory Scores

	Minimum	Maximum	Mean	SD
Idea Unit	0	23	9.07	5.26
Clarity	0	17	8.14	4.01
Own Answer	1	3	2.50	.74
Word Count	39	182	124.68	36.26
Online Info. Search Strategy Inventory	105	117	112.20	15.65

Pearson's Correlation Coefficient was conducted to measure the relation between four dependent variables and Online Information Search Strategy Inventory. The correlations between the participants' idea unit ($r = -.09$, $p > .05$), clarity ($r = -.10$, $p > .05$), own answer ($r = -.09$, $p > .05$), word count ($r = -.04$, $p > .05$) and Online Information Search Strategy Inventory scores are statistically not significant.

CHAPTER 5

DISCUSSION

The purpose of this study was to design and implement a special search and find tool in order to investigate how this tool helps ELT learners increase the quality of the information they seek. The OSFT is designed to help students refine what they intend to search and reflect on what they have found. As the full-fledged version was used by the experimental group, and the stripped-down version of the tool was used by the control group, they were respectively referred to as maximals and minimals.

The main idea for the OSFT comes from similar tools which are designed to help scaffold students' progress through the steps of their online inquiry. These steps are locating, evaluating, synthesizing and communicating, the scaffolding of which will result in better information quality (Quintana et al, 2004). In this study, only maximals were asked to follow these four steps aiming to lead them have a more successful research process by planning the search and find process efficiently, searching for relevant and credible websites, locating the information in these websites more easily, and synthesizing the findings as a whole to be able to answer the given questions in the OSFT.

5.1 The effects of the OSFT on online information synthesis
The effects of the following steps of online inquiry were observed in terms of four different outcomes: idea units, terminology, own answer and word count.

The more the idea units in students' writing, the more credible, relevant and current is the provided answer. The number of idea units is the most important indicators of the quality of the answers. Although the maximals were provided

scaffolding during the whole study through the OSFT, it was found that minimals provided more idea units and examples than maximals. The total number of idea units provided by minimals was 254, while it was 167 for maximals. This is probably interpreted as that four fields did not help maximals include more idea units in their answers or the minimals had a more successful online search and find process.

Another outcome of the study was the terminology participants used in their answers. In fact, idea unit and terminology are not totally unlike because when participants include idea units in their answers, they plausibly include the words counted as terminology, as well. There were such participants whose number of idea units were almost equivalent to their number of terminologies. However, it should not be understood as when they have terminology, they also automatically and inevitable include idea units in their answers because there were also cases where participants were not able to get any points from idea units although their scores for terminology were high. The reason might be that participants sometimes used terminology by not answering the question appropriately enough, no matter how much terminology they use. The results showed an insignificant difference between the terminology scores of maximals and minimals. However, the number of terminologies in minimals' online information synthesis task was more than maximals'. The total number of terminologies provided by minimals was 228, while it was 154 for maximals. It is not likely to interpret the results as they had a more successful online search and find tool since there is a chance that they might have used more terminology by not including any idea units, at all. Nevertheless, it is still worthy of note.

The third outcome of the study was own answer and while scoring the answers, each participant's screen records were watched to understand whether they

used their own words or directly copied and pasted the information from the web page. A review of video recordings revealed that a considerable portion of maximals and minimals wrote the online information synthesis tasks by using their own explanations (own answer). 20 of 28 participants from maximals and 18 of 28 participants from minimals provided their own answers without any copy-pasted text. There were only five participants in maximals and four participants in minimals who solely copied and pasted their answers which could have been interpreted as both groups mostly understood the online text they had read and had paraphrased the sentences. Nonetheless, the minimals scoring more in idea unit and in terminology is likely a counter argument to this interpretation. Another counter-argument for the possibility of both groups understanding the online text and paraphrasing it is the fact that the mean idea unit scores of the participants from both groups who either provided answers without any copy-pasted text (three points) or with only copy-pasted text (one point) did not differ significantly as can be seen in Table 11. One explanation is that the ones who solely copied and pasted the online text probably did not bother paraphrasing. Another plausible but not likely explanation is that writing by using one's own words does not always result in more qualified information.

Table 11. Independent Samples T-test for Idea Units of Copy-Pasted and Own Answered Tasks

	Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
.55	.45	-.14	47	.88	-.29	2.01	-4.34	3.76

The last outcome of the study was word count. In order to analyze the answers of the participants in terms of idea units, terminology and plagiarism, there was a need for enough writing. For that reason, a lower limit was applied to the answers which were including at least 150 words, there was no upper boundary. Results indicate that the minimals outperformed and both groups' means showed a significant difference in terms of the number of the words they used in their answers. This result is plausible to be interpreted as maximals had burnout and were overloaded with the amount of the study itself since the maximals had 27 questions (see Appendix I) while the others had only three (see Appendix J). Therefore, they might have written much shorter answers. Another possibility is maximals might have thought that was already enough for the study and they preferred to keep the last question shorter since they also wrote answers for the previous 26 questions

Apparently, -except own answer- the maximals always scored the lowest. One explanation for this result is the tool itself plausibly did not meet the expectations. This supports Zhang's (2013) findings of IdeaKeeper where the tool did not result in a good online search and find process since the participants dealt with the material too superficially by judging the websites emotionally and too quickly which was also a problem indicated by Zhang and Quintana (2012). The problem in Zhang's study was mainly the age since they were sixth grade middle school students. The age in this study can also be the problem since the results provide some evidence about the ineffective use of the OSFT by university level students. It is possible that the OSFT was not appropriate for this age group. Additionally, their language level in English was Pre-Intermediate which is also a possible factor for these results in a way that the task was already achievable for them with or without the OSFT, their language level could have been high enough.

5.2 Maximals' reporting of their use of the OSFT

The most problematic parts in the OSFT for the participants were likely the Evaluate and Synthesize parts. In the Evaluate part, there were nine participants out of 28 who probably misunderstood or/and gave irrelevant answers in the tool. On the other hand, in the Synthesize part, the most problematic question was Question 25 - the first step of synthesizing what they had searched and found online on three web pages - and there were 22 participants out of 28 who again probably misunderstood or/and gave irrelevant answers.

The problems with evaluating (Questions 8, 9, 14, 16, and 20) and synthesizing (Question 25) the information can provide some insights to Zhang and Quintana's (2012) claims about learners having numerous problems during the online inquiry process. Additionally, these online inquiry problems are also the concerns of other numerous studies which put forward evaluating and synthesizing from multiple and plausibly questionable information in online environments are demanding processes and can end up in possible difficulties (Zhang & Quintana, 2012; Coiro & Dobler, 2007; Leu, 2005; Landow, 1994; Reinking, 1997; Forzani & Burlingame, 2012; Graham & Metaxas, 2003; Kuiiper & Volman, 2008).

Online reading, as a problem-based process, starts with an urge to find an answer to a question and therefore it leads using search engines (Zhang & Quintana, 2012). During online reading, readers connect different sources of information by evaluating their quality in terms of credibility, relevance, trustworthiness and synthesizing these pieces of information (Coiro & Dobler, 2007). These processes mostly result in learners falling short of critically evaluating online information they come across in terms of credibility, doubtfulness, relevance, or reliability (Coiro, Coscarelli, Maykel, & Forzani, 2015; Walraven et al., 2008) and synthesizing the

qualified information which is a sign of a comprehension process problem (Zhang & Quintana, 2012; Leu et al., 2004). As support to these arguments, the participants in this study were also possible candidates to those who have these comprehension process problems when the results are taken into consideration. Since there were participants who did not relevantly and appropriately provide answers to particular questions/instructions, it can be probably interpreted as they were not able to succeed reading from multiple texts, construct and organize arguments by using the pieces of evidence from the web pages clearly and logically, and lastly express their understanding for the knowledge within the pages (Wiley, Goldman, Graesser, Sanchez, Ash, & Hemmerich, 2009).

The aim of the OSFT was to support maximals in four different phases of online inquiry process (locate, evaluate, synthesize, and communicate) by providing scaffolding which is given as a structure outlining these four fields as questions and instructions as in IdeaKeeper or OIT. These two tools, respectively by Zhang and Quintana (2012) and Kiili et al. (2016), are found to be useful in online search and find processes, especially for middle school students. However, the tools were not used by university students as in this study which is a plausible reason for the OSFT not resulting in any significant difference in terms of both groups' information synthesizing task scores.

5.2.1 Maximals' reporting in four phases of online inquiry process

In the tool, throughout four phases of online inquiry process (locating, planning, evaluating and synthesizing), the maximals were observed to have several problems in each field with the help of the screen captures. While they were dealing with questions, they changed their answers several times, hesitated or avoided answering

simply by typing a full stop (.) as an answer. This supports the findings by many researches (Zhang & Quintana, 2012; Coiro & Dobler, 2007; Coiro, Coscarelli, Maykey, & Forzani, 2015; Walraven et al., 2008; Castek et al., 2007; Leu et al., 2011; Coiro, 2003) who claim that learner struggle when they are asked to evaluate what they come across in an online environment. One plausible reason might be that the participants were not skillful enough to handle the process of reading patterns online as McPherson (2005) claims in one of his studies; yet, the results of their self-assessment online information search strategies inventory says the opposite.

According to the results, maximals had difficulties, especially while synthesizing the information they had found online. The most incomprehensible question for them to answer was Question 25 (see Appendix I) which is "List the expressions and the phrases you have learned from three different web pages" and it was the synthesizing step of the tool. Most of the participants were observed to write the answer to their driving questions to this question, which is probably because they did not understand the instruction. And the second most incomprehensible ones were Question 11, 17, and 23 which was "What did you learn from this web page?". Here, they were supposed to evaluate whether the web page was useful to answer their driving question. A few participants were observed to avoid answering it by typing full stops (.) as an answer.

When each screen record of the maximals is taken into consideration, it is possible to see that the maximals' efficiency decreased as time passed in the study because their rate of hesitation, using full stops or changing answers are observed to get increased. Although they were asked some questions three times (since there were three web pages), their percentages for each dropped down towards the end of the study. One possible explanation for this situation can be again the burnout they

might have experienced resulting from the duration of the study. Additionally, some of them were not able to copy and paste the relevant parts from the web pages that help them answer the question. This is probably an evaluating problem. Another likely explanation for the copying and pasting problem is that a pilot study was not carried out before the main study which would have helped them get familiar with the tool and the process itself.

Maximals also struggled during the locating part when they were asked to answer Question 6 (What keywords do you need to search on the Internet? (Write at least 5 keywords). Another locating problem was observed in Question 20 where they were asked "What does this web page say about your question?". Locating is an important step in online search and find process since the learners need to answer their questions based on the material they will locate online and they need to do it by locating the keywords, sub-questions, and the relevant web pages (Coiro & Dobler, 2007; The Rang Reading Study Group, 2002). However, these results mostly support Zhang and Quintana's (2012) argument for superficial engagement with the online material. Moreover, as in Question 25, maximals also had difficult times while answering Question 26 which was "Did you find your answer to your question? Summarize very shortly your findings by using information from 3 different web pages.". There were only six participants who could provide relevant content, which was again a probable sign of a synthesizing problem.

5.2.2 Effects of scaffolding strategy on maximals' online inquiry process
As clarified at the very beginning of the study, it was only maximals which were supplied scaffolding through questions and statements during the whole process. According to Zhang and Quintana (2012), scaffolding supposedly helps learners

manage the process of searching, locating, planning, and synthesizing the online search by providing them assistance to ease the task (Quintana, Reiser, Davis, Krajcik, Fretz, Duncan, Kyze, Edelson, Soloway, 2004). However, when the screen records were observed, that was seen the maximals couldn't make use of the scaffolded tool as it was presumed. This can be seen both from the percentages of the questions answered properly and from the scores of the maximals in terms of idea units which were lower than minimals. Therefore, the study did not come up with a conclusion supporting the scaffolding strategy by Zhang and Quintana (2012).

5.2.3 The evaluation of the OSFT by maximals

According to the results of descriptive analysis for User Feedback Questionnaire, the data had a range of 20-53, a mode of 41.5 and a mean of 34.07, *SD = 7.39.* There were 10 questions in the User Feedback Questionnaire, and more than half of the participants thought that the OSFT was useful for them during online search and find process. Therefore, it is plausible to say that maximals felt as if the tool helped and guided them through the online inquiry process. They found the instructions clear, comprehensible and the tool easy to use. All in all, the tool was well-received by the users. Nonetheless, when the online information synthesis scores of maximals are taken into consideration, it did not meet the expectations.

While they scored the tool as clear, comprehensible, and easy to use; they also thought the tool was not necessary to be able to complete the online information synthesis task. In other words, they believed the task was already achievable without the guidance and the scaffolding within the tool.

5.2.4 Maximals' prior knowledge and topic interest

Data for prior knowledge and interest were analyzed first with Shapiro-Wilk since the sample size was less than 50 participants (N=28) (Elliott & Woodward, 2007). The results showed that the scores were normally distributed as can be seen in Table 12.

Table 12. Distribution of Scores at Prior Know. and Topic Interest for Maximals

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
	Statistic	df	Sig.	Statistic	df	Sig.
Prior Knowledge	.225	28	.001	.918	28	.032
Topic Interest	.149	28	.114	.938	28	.100

The data for prior knowledge had a range of 1-6, a mode of 5 and a mean of 3.64, *SD = 1.19.* The data for topic interest had a range of 1-6, a mode of 4.5 and a mean of 3.71, *SD = 1.46.*

According to the results of descriptive statistics, the mean scores of maximals for Topic Interest was higher than Prior Knowledge which means the participants were more interested than being more knowledgeable about the topic they had chosen and it is possible to interpret as the participants mostly chose the question they were interested. On the other hand, there were three participants who stated not knowing anything about the topic they had chosen which probably means they had another motivation to choose the question in the task.

5.2.5 Maximals' website evaluations

As one step of online inquiry process, evaluation was already observed as a problem for participants in maximals. However, in order to have a better understanding of this step in the study, maximals were also asked to evaluate the web pages they had used

in their reports in terms of being relevant, current, credible, subjective, hard to read, and helpful. According to many studies, there are numerous learners struggling during evaluating online pages, rating information as credible or eliminate the unreliable one; therefore, they have poor evaluation processes (Coiro & Dobler, 2007; Forzani & Burlingame, 2012; Graham & Metaxas, 2003; Kuiiper & Volman, 2008; Zhang & Quintana, 2012). These studies also claim that learners do not pay much attention to the content relevance, or sometimes click on the first web page they find in search results without judging enough. Based on these claims, OSTF was designed to make this step easier through scaffolding the evaluation by asking participants to score the web pages on a Likert Scale. The aim was to make it explicit and obvious that the pages should be reliable, credible, helpful, current, easy to read, and objective in order to have a healthy online inquiry process.

According to the results, most of the participants rated the pages they had used as relevant, credible, helpful, and current and there were less than half of the participants who thought the pages they had chosen were subjective and hard to read (see Table 13).

Table 13. Descriptive Statistics for Website Evaluations

	N	Maximum	Minimum	Mean	SD
Relevant	28	18	7	17.04	2.32
Helpful	28	18	10	13.85	2.29
Credible	28	18	7	13.54	2.44
Current	28	18	5	13.14	2.69
Subjective	28	16	3	8.71	3.68
Hard	28	13	3	6.93	2.55

One plausible interpretation could be that the OSFT made it possible for participants to question the web pages before directly obtaining and consuming the information within them.

5.3 The relationship between online reading habits and writing scores

Minimals insignificantly scored higher than the maximals and it probably means the latter group assessed themselves lower in terms of reading online in English, for specific information, for the news, about their hobbies and interests, the social media accounts, in order to learn a language (in this case English). Maximals also reported that they have more difficulties online when it comes to search and find an online English web page, to find an answer to a question on this web page, to navigate through the pages to locate the information, to evaluate the credibility and relevance of the texts, to understand what they say, or to stay focused despite of the advertisements on the web pages. These problems about searching and findings answers, locating, evaluating or understanding what they say have a lot in common with the findings by Coiro et al. (2015) and Walraven et al. (2008) who argue that learners have difficulties when they are supposed to evaluate the quality, credibility, and the relevance of the texts online. Maximals' online reading habit scores are also a piece of evidence for Zhang and Quintana's (2012) findings emphasizing the fact that learners cannot locate the relevant information since they lack some significant skills.

Maximals' scores in online reading habit scores being lower than minimals' scores make sense when both groups' idea unit analyses are taken into consideration since the highest score in terms of idea unit belongs to the minimals. The argument here is that if the participants have more idea units in their online writing tasks in the study, it also should result in higher scores in online reading habits survey since both high idea unit scores and high online reading habit scores favor better online search and find skills in the English language.

There was not any statistically significant correlation between four outcomes (idea unit, terminology, own answer, and word count) and Online Reading Habits Survey which means neither the scores of them moved significantly in tandem nor they increased while the rest decreased or vice versa. Yet, there were still insignificant relationships between the outcomes and the surveys. That is, except for the idea unit, all other three outcomes of the study showed positive correlations with the survey which is plausible to interpret as the participants whose scores in clarity, own answer, and word count were high also scored high in the survey and it was expected to. Nevertheless, the case of having a negative correlation with idea unit which was the most important construct within four to analyze online search and find skills was out of our expectations. The reason might be that the survey was a self-assessment and the participants might have misled the results.

5.4 The relationship between online search skills and writing scores

The aim of Online Information Searching Strategy Inventory was to compare the participants in two groups in terms of their online information searching strategies and maximals insignificantly scored higher in this inventory which was the opposite in Online Reading Habits Survey. This means the participants in the minimals thought they have lower skills in terms of searching online, concentrating on the task online, using alternate web sources, evaluating the online information for its credibility and reliability, or the process of online search itself, comparing the texts, locating the purpose before searching, planning the steps and defining the necessary keywords, dealing with the problems they face online, or paying attention to the titles and the subtitles of web pages to identify the relevant information in their own native language which was Turkish in this study.

When the scores of both groups are observed, their scores in this survey are not anticipated since the minimals had higher scores in idea units and lower scores in the Online Information Search Strategy Inventory. The assumption was that the group which is better at online writing task will also assess themselves higher in this survey since both the construct and the survey ask for good online search and find skills.

The same insignificant correlations were also observed between four outcomes (idea unit, terminology, own answer, and word count) and Online Information Search Strategy Inventory, as well. Nonetheless, only negative correlations were found out which means the higher their scores were in the survey, the lower they got from each construct in the study. This result was also unanticipated since the aim of the study was to provide some evidence for the argument that people who are better at online information search and find will also score higher in this survey. However, since this survey was also in the form of a self-assessment, the results can be misleading.

CHAPTER 6

CONCLUSION

This study analyzed the effect of an online educational tool which was designed based on the scaffolding guidelines on ELL students' online read and find skills. Students (N= 56) in both groups which were undergraduates in preparatory classes participated in the study in the spring semester of 2018. Maximal and minimal guidance was provided to experimental and control groups during one-shot sessions which lasted one hour each. The effect of providing scaffolding and guidance through online inquiry processes which consist of four phases as locating, evaluating, synthesizing, and communication information was analyzed according to four outcomes of the study: idea units, terminology, own answer, and word count.

Additionally, their online reading habits and online search skills were examined with an assumption that their scores for both would positively correlate with their online information synthesis scores. Online Reading Habits Survey and Online Information Search Strategy Inventory consist of statements indicating that getting higher scores from both means better online inquiry processes. However, the results did not meet this assumption.

The results did not yield conclusive evidence about the use of an online search and find tool for university-level learners of EFL who engage with online tasks. Relevant literature does not concur with the results of the study (Quintana, 2004; Zhang & Quintana, 2012; Coiro & Coscarelli, 2014; Coiro & Dobler, 2007). Nonetheless, the feedback answers obtained from the experimental group about the OSFT were mostly positive and showed that the participants felt the tool scaffolded the online inquiry process for them which was not supported by the results of the

study. It likely indicates that the study neither contributed to the students' online search and find skills and nor helped them improve the quality of online information they encounter.

6.1 Limitations

Because of the shortage of time within the setting of the study, participants exposed to the OSFT and the basic version of the tool only once without any pilot study. Therefore, only one session was held to launch the study. However, both tools require certain orientation for the participants to get used to them. Although they were allocated one hour, much of the time was probably for them to get adjusted to the tools since they did not have any prior experience about them. The students could not follow every instruction dictated by the researcher, some of the participants could not manage their time in the beginning, especially the ones in the maximals. When learners expose to new online educational software, there could be both positive and negative reactions towards it. However, as they continue using the same tool and the tool loses its novelty for the learners, the same effect of the software might not be seen. Therefore, exposing them to the same tool multiple times could have strengthen the effect of the OSFT. In order to avoid these problems, holding a pilot session at the very beginning might help participants gain more familiarity with the process itself. Thereby, the risk of missing data and misunderstanding of the instructions might be prevented.

In addition, the researcher allocated one hour for both groups' online information synthesis tasks. Yet, the time needed for the maximals and minimals was relatively heterogeneous since the tasks completed by the maximals required more

time. Therefore, the assigned duration for each task could have been arranged accordingly.

Online Reading Habits Survey and User Feedback Questionnaire were created by the researcher. Bivariate correlation and descriptive analysis were applied to the scores of both and the results were discussed through the study. However, the reliability and the validity of both the survey and the questionnaire should be addressed as a limitation since such confidence was not reassured statistically in this study. Reliability and validity are compulsory requirements for all types of research (Oliver, 2010) which enables eliminating and minimizing the threats to the generalizability of the study.

The aim of the study was to measure participants' online information synthesis scores. However, the operationalization of the term synthesis can be problematic in the study, since synthesizing skill is not measurable within the given time limitation. It asks for longer period of time engaging with multiple texts on the same topic. Therefore, a better online task can be designed to assess ELLs' synthesis skills.

Although the students were selected from a variety of departments, all of them were freshmen and they were not selected or assigned randomly even though there was still considerable control over selecting and scheduling the measures. Although two surveys were given to the participants in both groups in order to eliminate the possibility of having a more disadvantaged group in terms of online reading habits and online search strategies, the design of the study still creates less compelling support for the results.

68

It should be noted that there were only 56 students in the study. The study might have yielded deeper insights about the statistical analysis and more robust findings, had it been possible to include more participants.

The content of each driving question which was prepared for the participants to choose among to look for answers in both full-fledged and stripped-down version of the tool did not represent all the problem-based online environments since there were only six questions. Furthermore, the difficulty and the scope of these limited number of questions likely to show differences despite the attempts to bring them into the same lines.

6.2 Implications for further research and the OSFT

Based on the findings and the experience of working in limited conditions, several recommendations are provided on the implement of the online educational software for further research and enthusiastic ELT teachers who are willing to employ an OSFT integrated syllabus.

This study was implemented with preparatory class students where a fundamental need for being able to evaluate quality online information in English was observed by the instructors of the relevant classrooms. In order to fulfil this need, an online search and find tool was designed as an instructional method. Further research in online search and find skills in ESL and EFL by university-level learners could be carried out, since there is a limited number of studies on this area, especially in Turkey. A similar study is possible to be conducted in a university with higher English language levels which could be helpful in providing a better insight about the implementation of the tool and its effects in the online inquiry. If possible, researchers should also include participants who are sophomore, junior, or senior not

only freshmen. Additionally, the sample size could be larger in terms of the generalizability of the study.

While designing the OSFT, scaffolds being provided through the online information synthesis task had major importance. However, in the future for more valuable results, the scaffolds could be reorganized and improved since the results of the study implies so. The dependent variable of the study which was online information synthesize task could also be redesigned since the nature of the synthesizing skill requires so. In line with this, the time allocated for the task could be rearranged, as well.

APPENDIX A

FULL-FLEDGED OSFT SCREENSHOTS

ONLINE SEARCH AND FIND TOOL

Welcome!
Thank you for your participation!

- First choose **one** question from the given questions.
- Then carry out an online search to find an answer to it by using **three** different web pages.
- And lastly write a **report** of your findings.
- You can check as many web pages as you like; however, use **only** three of them.
- You can use a dictionary if you need. Be careful when you submit your answers since you **cannot** change them when you click on "Submit" button.
- Please **do not** press **ESC** button, since it will stop recording.
- For this study, you will have **one hour** in total.

START

Click to see the instructions again.

Click to see the questions again.

Click to exit when you finish.

Please write your name and surname:

Type here.

Your name will stay **anonymous** and will **not** be used for the study.

ONLINE SEARCH AND FIND TOOL

Choose only one question:

- ○ How likely is your cryptocurrency (Bitcoins) to be hacked?
- ○ Where can nanotechnology be used? Can it be used in everyday life? In what ways?
- ○ If Mars colonization becomes real, how will it affect the economy on Earth?
- ○ Apple's I-Phone launch – Why is it so popular? What makes it so special?
- ○ Why is social media so popular? Should we be concerned?
- ○ Why do well-known companies such as Pepsi or Starbucks shift their strategies toward being healthy and environmentalist?

LOCATE

1/27. What is your question? (in your own words)

Type your answer here.

LOCATE

2/27. Why did you choose this question?

Type your answer here.

LOCATE

3/27. What other questions should you ask to answer your main question?

Type your answer here.

LOCATE

1 2 3 4 5 6

4/27. How much do you already know about this topic? ⦿ ⦿ ⦿ ⦿ ⦿ ⦿

6: Almost everything
5: Very much
4: Fairly
3: A little bit
2: Not very much
1: Almost nothing

CLICK ➡ NEXT

LOCATE

1 2 3 4 5 6

5/27. How much are you interested in this topic? ⦿ ⦿ ⦿ ⦿ ⦿ ⦿

6: Almost everything
5: Very much
4: Fairly
3: A little bit
2: Not very much
1: Almost nothing

CLICK ➡ NEXT

LOCATE

6/27. What keywords do you need to search on the Internet? (Write at least 5 keywords)

Type your answer here.

LOCATE

Web Page 1:

7/27. Copy and paste the address of the first web site below. (http://www...)

Paste the address here.

LOCATE

Now use Google Search Engine and look for answers to your **main question** by using **3** different web pages. After you finish your searching, come back here.

Do not close the web pages since you need to copy and paste their addresses.

Click to go to: Google.com

When you finish searching, **CLICK** here.

EVALUATE

Web Page 1:

8/27. What does this web page say about your question?

Type your answer here.

EVALUATE

Web Page 1:

9/27. Please copy and paste relevant sentences from this web site for your main question.

Copy and paste the parts from the website here.

EVALUATE

Web Page 1:

10/27. Does it help you answer your question? (Explain shortly)

Type your answer here.

EVALUATE

Web Page 1:

11/27. What did you learn from this web page?

Type your answer here.

EVALUATE

Web Page 1:

12/27.This website is:

(*1* means "Strongly Disagree" and *6* means "Strongly Agree".)

	1	2	3	4	5	6
Relevant (Suitable)	●	●	●	●	●	●
Up to date (Current)	●	●	●	●	●	●
Credible (Reliable)	●	●	●	●	●	●
Subjective (Biased)	●	●	●	●	●	●
Hard to read	●	●	●	●	●	●
Helpful	●	●	●	●	●	●

CLICK ➡   NEXT

SYNTHESIZE

Web Page 1, 2, 3:

25/27. List the expressions and the phrases you have learned from three different web pages.

Type your answer here.

SYNTHESIZE

Web Page 1, 2, 3:

26/27. Did you find your answer to your question? Summarize very shortly your findings by using information from 3 different web pages.

Type your answer here.

COMMUNICATE

Web Page 1, 2, 3:

27/27. Report your findings by using the information from three web pages in a short paragraph. (minimum 150 words).

Type your answer here.
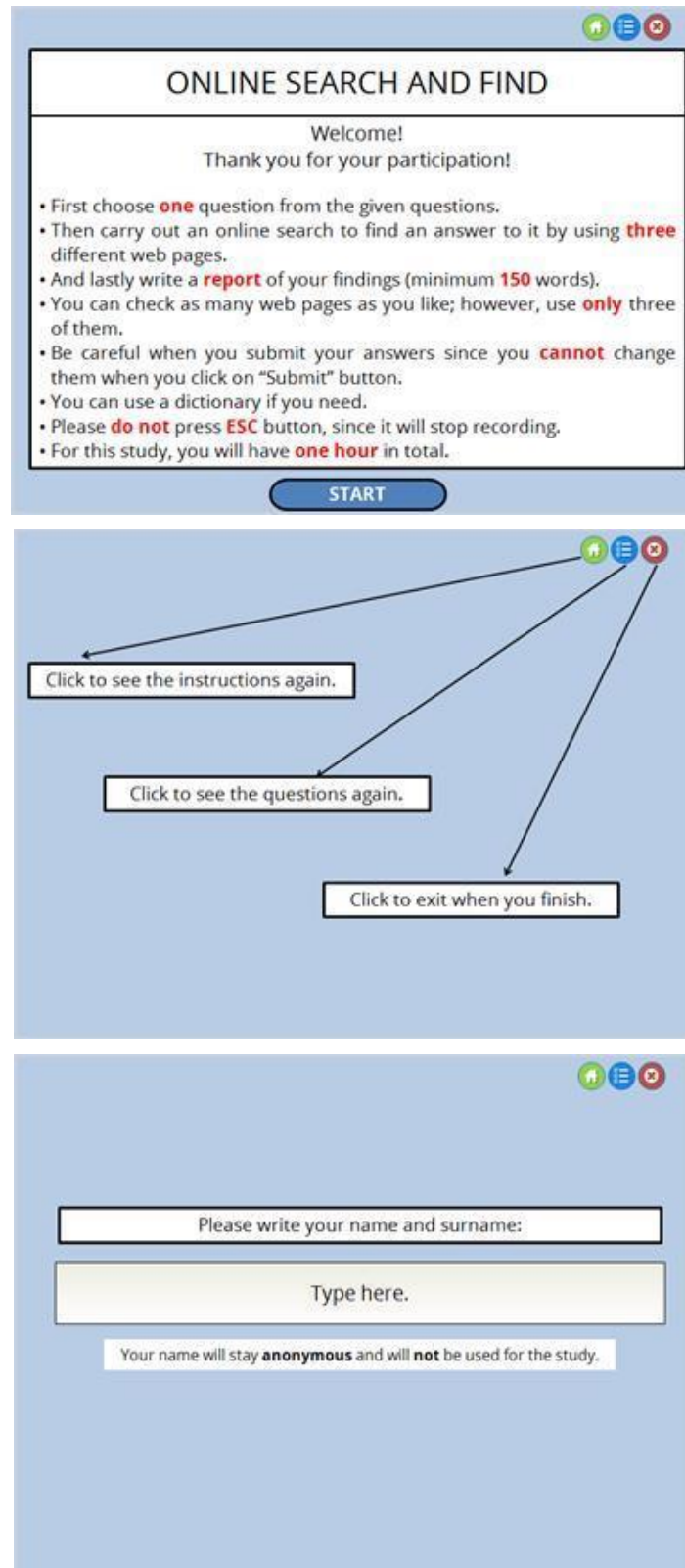
ONLINE SEARCH AND FIND

Choose only one question:

- ○ How likely is your cryptocurrency (Bitcoins) to be hacked?
- ○ Where can nanotechnology be used? Can it be used in everyday life? In what ways?
- ○ If Mars colonization becomes real, how will it affect the economy on Earth?
- ○ Apple's I-Phone launch – Why is it so popular? What makes it so special?
- ○ Why is social media so popular? Should we be concerned?
- ○ Why do well-known companies such as Pepsi or Starbucks shift their strategies toward being healthy and environmentalist?

What is your question? (in your own words)

Type your answer here.

LOCATE

Now use Google Search Engine and look for answers to your by using **3** different web pages. After you finish your searching, come back here.

Do not close the web pages since you need to copy and paste their addresses.

Click to go to: Google.com

When you finish searching, **CLICK** here.

Now copy and paste three websites below. Put **comma (,)** between each website.

Copy and paste the addresses here.

Report your findings by using the information from three web pages in a short paragraph. (minimum 150 words).

Type your answer here.

ONLINE READING HABITS SURVEY

What do you read online?

Below are listed the statements defining the situations that we can experience during reading English web pages on the internet. The meanings of numbers next to each statement are as followed:

1=	*"**Not at all** like me"*	*2=*	*"**Not a lot** like me"*
3=	*"**Somewhat not** like me"*	*4=*	*"**Somewhat** like me"*
5=	*"**A lot** like me"*	*6=*	*"**Just** like me"*

Read the following statements carefully and select the option that fits you best between 1 and 6. Your answers are important to us. Thanks for your time.

		Not at all	Not a lot	Somewhat not	Somewhat	A lot	Just
		1	**2**	**3**	**4**	**5**	**6**
1	I read English text on the Internet during the day.						
2	I read English for educational purposes on the Internet.						
3	I read English on foreign news sites on the Internet.						
4	I read English for my hobbies and interests on the Internet.						
5	I read English texts on my social media accounts on the Internet.						
6	I read to learn English on the Internet.						
7	The English web pages found on the Internet are very confusing for me.						
8	I can get lost while browsing the web sites prepared in English on the Internet.						
9	I spend a lot of time searching for an answer to a question on the Internet English web pages.						
10	While reading the English web pages on the Internet, I find it difficult to refine the quality information among others.						
11	I find it difficult to understand what I read on web pages while reading English on the Internet.						
12	The ads on the English web pages I read on the internet can distract me.						
13	I don't know where to start reading the English web pages on the Internet.						
14	I find it difficult to access reliable sources when reading English on the Internet.						
15	When I read English on the Internet, I have difficulty when I come across unfamiliar words.						

Answer the questions below.

      1. How often do you read Turkish on the Internet during the day?

      2. What do you read in Turkish on the Internet? Write.

Demographic Information:

Name - Surname: _____

Gender: ___Female   ___ Male

Ager range: ___ 18-21   ___ 22-25   ___ 26-30   ___31-39   ___40 and above

YADYOK Language Level: ___ Beginner ___Pre-Intermediate   ___Intermediate   ___Advanced

DBS (English Level Test) Score: _____

Undergraduate Program: _____

ONLINE READING HABITS SURVEY (TURKISH)

İnternette ne okursunuz?

Aşağıda İnternette İngilizce web sayfalarını okurken yaşayabileceğimiz deneyimleri tarif eden ifadeler listelenmiştir. Her bir ifadenin yanında yer alan numaraların anlamları şöyledir:

1=	*"Bana **hiç** uymuyor"*	2=	*"Bana **nadiren** uyuyor"*
3=	*"Bu bana **ara sıra** uyuyor"*	4=	*"Bu bana **sıklıkla** uyuyor"*
5=	*"Bu bana **çoğu zaman** uyuyor"*	6=	*"Bu bana **tamamen** uyuyor"*

Aşağıdaki ifadeleri dikkatlice okuyun ve 1 ile 6 arasında size en çok uyan seçeneği işaretleyin. Cevaplarınız bizim için önemlidir. Zaman ayırdığınız için teşekkürler.

		Hiç	Nadiren	Ara Sıra	Sıklıkla	Çoğu zaman	Tamamen
	1: Bana hiç uymuyor → 6: Bana tamamen uyuyor	1	2	3	4	5	6
1	Gün içerisinde İnternette İngilizce metin okurum.						
2	İnternette eğitim amaçlı İngilizce okuma yaparım.						
3	İnternette yabancı haber sitelerinde İngilizce okuma yaparım.						
4	İnternette hobi ve ilgi alanlarıma yönelik İngilizce okuma yaparım.						
5	İnternette sosyal medya hesaplarımda karşılaştığım İngilizce metinleri okurum.						
6	İnternette İngilizce öğrenmek için okuma yaparım.						
7	İnternette bulunan İngilizce web sayfaları çok karışık geliyor.						
8	İnternette İngilizce hazırlanmış web sitelerinde dolaşırken kaybolabiliyorum.						
9	İnternette İngilizce web sayfalarında bir sorunun cevabını ararken çok fazla vakit harcıyorum.						
10	İnternette İngilizce web sayfalarını okurken doğruluğu şüpheli bilgiyi, bilgi yığını içinden ayıklarken zorlanıyorum.						
11	İnternette İngilizce okuma sırasında web sayfalarında okuduğumu anlamakta zorlanıyorum.						
12	İnternette okuduğum İngilizce web sayfalarındaki reklamlar dikkatimi dağıtabiliyor.						
13	İnternette İngilizce web sayfalarında okumaya nereden başlamam gerektiğini bilemiyorum.						
14	İnternette İngilizce okuma yaparken güvenilir kaynaklara erişmekte zorlanıyorum.						
15	İnternette İngilizce okuma yaparken sözcüklerin anlamını bilmediğim için zorlanıyorum.						

Aşağıdaki soruları cevaplayınız.

1. İnternette gün içinde hangi sıklıkta Türkçe okuma yaparsınız?

2. İnternette Türkçe neler okursunuz? Yazınız.

Demografik Bilgiler:

Adı – Soyadı: _____

Cinsiyet: ___Kadın ___ Erkek

Yaş aralığı: ___ 18-21 ___ 22-25 ___ 26-30 ___31-39 ___40 ve üstü

YADYOK Sınıf düzeyi: ___ Beginner ___Pre-Intermediate ____Intermediate ____Advanced

DBS (Düzey Belirleme Sınavı) Puanı: _____

Lisans Programı: _____

APPENDIX E

ONLINE INFORMATION SEARCH STRATEGY INVENTORY

Online Information Search Strategy Inventory

Name – Surname: _____

We search online in order to answer a question which we wonder about or is assigned us as homework at school. Sometimes, we find what we look for, sometimes we do not. Below are listed the situations which explain our online search experiences. The meanings of numbers next to each statement are as followed:

1=	*"**Not at all** like me"*	*2=*	*"**Not a lot** like me"*
3=	*"**Somewhat not** like me"*	*4=*	*"**Somewhat** like me"*
5=	*"**A lot** like me"*	*6=*	*"**Just** like me"*

Read the following statements carefully and select the option that fits you best between 1 and 6.
Your answers are important to us. Thanks for your time.

		Not at all	Not a lot	Somewhat not	Somewhat	A lot	Just
		1	**2**	**3**	**4**	**5**	**6**
1	I don't know what to do when I search on the internet.						
2	I always feel lost when I search on the internet.						
3	I try other databases when I cannot find the information I am looking for.						
4	I know how to connect to a website through its URL.						
5	I always evaluate the relationship between different types of information on the internet.						
6	I know how to use browsers, such as Internet Explorer or Google.						
7	I compare different types of information I reach from different web sites.						
8	I think of new solutions when I am frustrated by the problems that arise when searching.						
9	I set my goals before I start to search online.						
10	I constantly remind myself of the purpose of the online search.						
11	Sometimes I give my online search a break and I think what information is missing.						
12	I decide whether the information on a website is worth referencing.						
13	When my search isn't successful, I try other search engines.						
14	When I search the Internet, I always feel restless.						
15	When I can't get enough information, I try other websites that can be a reference to me and provide information.						
16	I usually think of the keywords I can use beforehand.						
17	I try to choose the main ideas provided on each website as best I can.						
18	I look at the headlines and links on web pages to capture certain information.						
19	I know how to use the advanced search options provided by search engines.						
20	I don't know how to start searching online.						
21	I look at the headlines and links to see the main ideas on a web page.						
22	I think about how to compile and present the data I find on the web.						
23	I do my best to solve any problems that occur during the search.						
24	I think about how to benefit from the information I am looking for.						
25	When I encounter problems that I can't solve, I usually stop searching.						

APPENDIX F

ONLINE INFORMATION SEARCH STRATEGY INVENTORY (TURKISH)

Çevrimiçi Bilgi Arama Stratejileri Envanteri

Ad - Soyad : _____

Merak ettiğimiz ya da okulda ödev olarak verilen bir soruyu cevaplayabilmek için internette arama yaparız. Bazen aradığımızı buluruz, bazen bulamadan çıkarız. İnternette arama yapma deneyimlerimizi tarif eden ifadeler aşağıda listelenmiştir. Her bir ifadenin yanında yer alan numaraların anlamları şöyledir:

1=	*"Bana **hiç** uymuyor"*	*2=*	*"Bana **nadiren** uyuyor"*
3=	*"Bu bana **ara sıra** uyuyor"*	*4=*	*"Bu bana **sıklıkla** uyuyor"*
5=	*"Bu bana **çoğu zaman** uyuyor"*	*6=*	*"Bu bana **tamamen** uyuyor"*

Aşağıdaki ifadeleri dikkatlice okuyun ve 1 ile 6 arasında size en çok uyan seçeneği işaretleyin. Cevaplarınız bizim için önemlidir. Zaman ayırdığınız için teşekkürler.

		Hiç	Nadiren	Ara Sıra	Sıklıkla	Çoğu zaman	Tamamen
	1: Bana hiç uymuyor → 6: Bana tamamen uyuyor	1	2	3	4	5	6
1	İnternette arama yaparken ne yapacağımı bilmiyorum.						
2	İnternette arama yaparken her zaman kaybolmuşum hissine kapılırım.						
3	Bir veri tabanından aradığım bilgiyi bulamadığım zaman diğer veri tabanlarını denerim.						
4	Belli bir web sitesine onun URL'siyle nasıl bağlanacağımı bilirim.						
5	Web'ten bulduğum bilgiler arasındaki ilişkileri sürekli değerlendiririm						
6	Internet Explorer veya Google gibi bir web tarayıcısını kullanmayı bilirim.						
7	Farklı web sitelerinden topladığım bilgileri karşılaştırırım.						
8	Arama yaparken ortaya çıkan problemler beni hayal kırıklığına uğrattığı zaman yeni çözümler düşünürüm.						
9	Çevrimiçi aramaya başlamadan önce hedeflerimi belirlerim.						
10	Çevrimiçi aramanın amacını sürekli kendime hatırlatırım.						
11	Bazen aramaya ara verip, hangi bilgilerin hala eksik olduğunu düşünürüm.						
12	Bir Web sitesindeki bilginin referans göstermeye değip değmediğine karar veririm.						
13	Aramam başarılı olmayınca başka arama motorlarını denerim.						
14	İnternetten arama yaparken her zaman tedirgin hissederim.						
15	Yeterli bilgiye ulaşamadığımda, bana referans olabilecek ve bilgiye ulaştırabilecek başka web sitelerini denerim.						
16	Genellikle kullanabileceğim anahtar kelimeleri önceden düşünürüm.						
17	Elimden geldiğince her web sitesinde sağlanan ana düşünceleri seçmeye çalışırım.						
18	Belli başlı bilgiyi yakalamak için Web sayfalarındaki başlıklara ve bağlantılara bakarım.						
19	Arama motorları tarafından sağlanan gelişmiş arama seçeneklerini nasıl kullanacağımı bilirim.						
20	Çevrimiçi olarak aramama nasıl başlayacağımı bilmiyorum.						
21	Bir web sayfasındaki ana fikirleri yakalayabilmek için başlıklara ve bağlantılarına bakarım.						
22	Web'ten bulduğum verileri nasıl derleyip sunacağımı düşünürüm.						
23	Arama sırasında oluşan herhangi bir sorunu çözmek için elimden geleni yaparım.						
24	Aradığım bilgiden nasıl yararlanacağımı düşünürüm.						
25	Çözemediğim sorunlarla karşılaştığımda genellikle, aramayı bırakırım.						

ETHICAL APPROVAL OF THE INAREK/SBB ETHICS SUB-COMMITTEE

T.C.
BOĞAZİÇİ ÜNİVERSİTESİ
İnsan Araştırmaları Kurumsal Değerlendirme Alt Kurulu
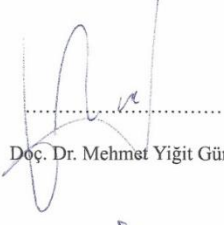
Sayı: 2018 – 14

04 Nisan 2018

Melike İşcan

Eğitim Teknolojisi

Sayın Araştırmacı,

"İngilizce bilgisi sınırlı olan öğrenciler için çevrimiçi arama ve bulma aracının tasarlanması, geliştirilmesi ve değerlendirilmesi" başlıklı projeniz ile ilgili olarak yaptığınız SBB-EAK 2018/19 sayılı başvuru İNAREK/SBB Etik Alt Kurulu tarafından 04 Nisan 2018 tarihli toplantıda incelenmiş ve uygun bulunmuştur.

Doç. Dr. Mehmet Yiğit Gürdal

Doç. Dr. Gül Sosay

Doç. Dr. Ebru Kaya

Yrd. Doç. Dr. Bengü Börkan

Dr. Nur Yeniçeri

APPENDIX H

USER FEEDBACK QUESTIONNAIRE

What do you think of the OSFT?

Name - Surname: _____

Thank you for participating in the study. To what extent do the following statements reflect your thoughts on the Online Search-and-Find Tool (OSFT) you are using? Choose a value from 1 to 6 that best suits you.

	1: Strongly disagree → 6: Strongly agree	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
		1	**2**	**3**	**4**	**5**	**6**
1	I found the OSFT useful.						
2	The OSFT guided me to search and find information on the Internet in English.						
3	I would like to search by using the OSFT again.						
4	It was easy to use the OSFT.						
5	I was able to find the answer to my question.						
6	The instructions were clear and understandable.						
7	I would have trouble finding the answer to my question if I had not used the OSFT.						
8	The questions and instructions in the OSFT helped me to find the answer I was looking for.						
9	I can advise the OSFT others to search and find information online.						
10	I could find the answer to my question easily without the OSFT.						

ÇABA'yı nasıl buldunuz?

Adı - Soyadı: _____

Çalışmaya katıldığınız için teşekkürler. Aşağıdaki ifadeler kullandığınız Çevrimiçi Arama-ve-Bulma Aracı (ÇABA) ile ilgili düşüncelerinizi ne ölçüde yansıtıyor? Size en uygun gelen şekilde 1'den 6'ya bir değer seçiniz.

		1: Kesinlikle katılmıyorum → 6: Kesinlikle katılıyorum					
		Kesinlikle katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Kısmen katılıyorum	Katılıyorum	Kesinlikle katılıyorum
		1	2	3	4	5	6
1	ÇABA'yı faydalı buldum.						
2	ÇABA İnternette İngilizce bilgi arama ve bulmada bana yol gösterdi.						
3	Yine ÇABA'yı kullanarak arama yapmak isterim.						
4	ÇABA'yı kullanmak kolaydı.						
5	ÇABA sayesinde çalışmadaki sorumun cevabını bulabildim.						
6	Yönergeler açık ve anlaşılırdı.						
7	ÇABA olmasaydı sorumun cevabını araştırıp bulmakta zorlanırdım.						
8	ÇABA'daki sorular ve yönergeler aradığım cevabı bulmamda yardımcı oldu.						
9	ÇABA'yı çevrimiçi bilgi aramak ve bulmak için başkalarına da tavsiye edebilirim.						
10	ÇABA olmasaydı da sorumun cevabını rahatlıkla bulabilirdim.						

APPENDIX J

MAXIMALS OSFT QUESTIONS

01/27. What is your question? (in your own words)

02/27. Why did you choose this question?

03/27. What other questions should you ask to answer your main question?

04/27. How much do you already know about this topic?

05/27. How much are you interested in this topic?

06/27. What keywords do you need to search on the Internet? (Write at least 5 keywords)

07/27. Copy and paste the address of the first web page below.

08/27. What does this web page say about your question?

09/27. Please copy and paste relevant sentences from this web page for your main question.

10/27. Does it help you answer your question? (Explain shortly)

11/27. What did you learn from this web page?

12/27. This website is:

- Relevant (Suitable)

- Up to date (Current)

- Credible (Reliable)

- Subjective (Biased)

- Hard to read

- Helpful

13/27. Copy and paste the address of the second web page below.

14/27. What does this web page say about your question?

15/27. Please copy and paste relevant sentences from this web page for your main question.

16/27. Does it help you answer your question? (Explain shortly)

17/27. What did you learn from this web page?

18/27. This website is:

- Relevant (Suitable)

- Up to date (Current)

- Credible (Reliable)

- Subjective (Biased)

- Hard to read

- Helpful

19/27. Copy and paste the address of the third web page below.

20/27. What does this web page say about your question?

21/27. Please copy and paste relevant sentences from this web page for your main question.

22/27. Does it help you answer your question? (Explain shortly)

23/27. What did you learn from this web page?

24/27. This website is:

- Relevant (Suitable)

- Up to date (Current)

- Credible (Reliable)

- Subjective (Biased)

- Hard to read

- Helpful

25/27. List the expressions and the phrases you have learned from three different web pages.

26/27. Did you find your answer to your question? Summarize very shortly your findings by using information from 3 different web pages.

27/27. Report your findings by using the information from 3 web pages in a short paragraph (minimum 150 words).

APPENDIX K

MINIMALS TOOL QUESTIONS

1. Choose only one question (among six).

2. What is your question (in your own words)?

3. Now use Google Search Engine and look for answers to your main question by using 3 different web pages.

4. Now copy and paste three web pages below. Put comma (,) between each web page.

5. Report your findings by using the information from three web pages in a short paragraph (minimum 150 words).

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