Digital Reading and the Concept of Ebook: Metaphorical Analysis of Preservice Teachers’ Perceptions Regarding the Concept of Ebook

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Abstract
The aim of this study was to determine the metaphorical perceptions of preservice Turkish teachers (PTTs) regarding the concept of ebook. In accordance with this aim, answers to the questions of “What are the metaphors used by PTTs for the concept of e-book?” and “Under which categories could the metaphors used by PTTs for the concept of e-book be collected?” were sought. A total of 150 preservice teachers studying in the Faculty of Education, Turkish Education Department at Çukurova University, constituted the participants of the research designed according to the phenomenology design, one of the qualitative research methods. A semi-structured interview form was used as data collection tool. Data were analyzed using the content analysis technique. As a result of the study, it was determined that eight categories emerged from the metaphors produced by PTTs for ebook and that they mostly had positive meanings. These categories are, namely, facilitating, information source, accessible, portable, requirement, inadequate, attractive, and harmful. PTTs mostly produced metaphors for ebook in the facilitating category. It was followed by the information source and accessible categories. It was determined that some PTTs produced negative metaphors for ebooks, and these negative metaphors were collected under the inadequate and harmful categories.

Keywords
electronic book, digital reading, reading comprehension, metaphor, perception

Introduction
Nowadays, the meanings attributed to the concepts of learning and teaching, and to student and teacher roles, have also changed along with the reflection of the rapid change in technology in the education and training process. An understanding that effective and permanent learning will take place through the active participation of the individual and the structuring of knowledge, that the teacher is the guide instead of being the absolute master and transmitter of information, and the inclusion of technological tools in the teaching process has come to stay, has begun to be influential. The fact that education programs are based on the constructivist theory has been influential in this transformation. According to Ciampa (2012a), constructivism focuses on controlling the learner in the learning process, reducing the gap between school and life, and the fact that learners face real-life experiences. The use of technological tools for teaching purposes and increasing the interest and motivation in courses has increasingly gained importance along with the fact that the constructivist theory has come to the forefront. The relevant literature has consistently revealed that the constructivism theory is a suitable theory for e-learning design (Almala, 2005; Harman & Koohang, 2005; Hung & Nichani, 2001; Koohang & Harman, 2005; Oliver, 1999). As a suitable distance education option, e-learning requires students to be responsible for their own learning, to collaborate and discuss with their peers and experts, to expand their comprehension, to restructure their knowledge individually and to solve real-life problems. According to constructivism, students are allowed to choose how to perform learning activities in a quality e-learning environment (Almala, 2005). The constructivist objectives, which are, namely, learner control, autonomy support, choice, active problem-solving, and use of authentic texts in beginning reading instruction are preferred to explicit, teacher-coordinated instruction (Ciampa, 2012a). There are four important advantages to e-learning: learners have their own freedom to decide when each lesson will be learned, learners reduce learning time constraints on lecturers, learners have their own freedom to express thoughts and to ask questions...
without limitations, and learners have their own elections of accessibility of courses’ subject matters and related materials (Bouhnik & Marcus, 2006). In this context, e-learning is the use of web technologies that can provide proper solutions to increase the knowledge, skills, and performance of learners. In this process, technology has become a part of the education and training process, along with the developments experienced (Rosenberg, 2001).

The widespread use of technological tools in the teaching process has changed the areas of usage of language skills in language teaching and, not only printed materials but also tools, such as a computer, mobile phone, digital camera, smart board, and projection have become important and usable in the development of language skills. In this context, it has been stated that the use and reading of texts in the electronic environment will be preferred more in the process of developing reading skills, one of the basic language skills, due to the advantages, such as easy storage, restoring when the need arises, and the saving of resources (Dillon, 1992). There have been studies determining that computer-assisted instruction improves reading comprehension skills (Chambers et al., 2008; Johnson-Glenberg, 2005; Twyman & Tindal, 2006).

In the 21st century, the definition of literacy has expanded, and a definition of literacy that includes the skills for students to be in interaction with learning, understanding, and technology has been formed (De Jong & Bus, 2002). The International Reading Association has emphasized the importance of integrating literacy programs with information and communication technologies. The text is traditionally defined as written messages and symbols included in books, magazines, and newspapers. However, literacy programs should also include multiple sources containing digital and electronic books (Larson, 2010).

According to Korat and Shamir (2007), the development of technology will open new doors for children and their literacy achievements. Printed books are effective tools in the development of reading; however, electronic books can significantly contribute to the development of reading skills through digital reading as they contain designs that appeal to different learner characteristics. As the new literacy theory involves communicating and decrypting the content, electronic books can be helpful to accomplish it. Nevertheless, according to Bal and Tezer (2017), ebooks are one of the basic distance education materials nowadays as they include visual and audio elements in addition to their multimedia options. The ebook is said to witness exceptional growth as a sophisticated and innovative technological advancement that will completely replace the traditional paperbacks over time (Lai & Chang, 2011; Lynch, 2012; Shen, 2011; cited by Oyaid & Alshay, 2019).

Importance of Ebooks

Nowadays, there is no universal ebook definition accepted by everyone. The term is ambiguously used in the literature. Although its characteristics, such as supporting learning activities and transforming the scientific environment are accepted, its conceptual expression is not certain (Cox, 2004). An ebook is “an electronic version of a printed book which can be read on a personal computer or a handheld device designed specifically for the purpose” (Anuradha & Usha, 2006, p. 49). Electronic books are electronic text forms that are published digitally and are available in computers, portable tablets, and customized reading devices. This new digital literacy becomes more accessible as people mainly use ebook applications with various portable tools, such as tablets, ipads, and ebook readers (Amazon Kindle and Barnes & Noble NOOK; Lee, 2017). According to Weber and Cavanaugh (2006), an ebook is an electronic publication that provides multimedia features, including pictures, animation, sound, music, video, and hyperlinks, and which can be viewed on desktop computers, laptop computers, and portable devices.

As a result of the study carried out by Rockinson-Szapkiw et al. (2013), they determined that the effective and psychomotor learning levels of students who prefer ebooks are perceived at a higher level when compared with those students who prefer traditional printed course books. Asrowi et al. (2019) also determined that students using interactive ebooks had higher learning outcomes on social issues compared with students using printed course books. In another study, it was determined that graduate students preferred ebooks to printed books and, as a reason for it, students indicated that ebooks provided instant feedback, motivated them to check their learning status, drew attention to important knowledge, and saved time (Alhammad & Ku, 2019). In another study, university students found that the ebook is useful for educational purposes as they believe it is much cheaper, portable, and easily accessible from any place and at any point in time (Oyaid & Alshay, 2019).

When compared with printed books, ebooks have unique features such as interaction and integration with course materials. By using ebooks, it is possible to perform actions, such as investigating the text, highlighting, and even interpreting, beyond simply reading and viewing (Ravid et al., 2008). In certain studies, it was determined that highlighting in the text is beneficial for understanding and remembering what is being read (Johnson & Johnson, 1986; Nist & Hogrebe, 1987). In the study carried out by Dillon and Gabbard (1998), it was determined that reading an ebook is better than reading a printed book when it comes to doing important searches, changing visual details, or making a comparison.

Texts in electronic books are more effective for children, with respect to deciphering and understanding information, because hyperlinks provided in electronic books enable children to reach deeper meanings. Interactive features in digital texts encourage students to stay on the reading task, increase the time they spend by reading, and enable them to be engaged in conversations that will increase reading comprehension with their peers. The fact that students are able to stay on the reading task may increase reading comprehension.
and enable them to participate in critical discussions. Interactive applications in ebooks create a multimodal classroom environment for rich learning and help children to believe in themselves as a reader (Brown, 2016). Furthermore, the use of ebooks liberates teachers to be involved in other pedagogic responsibilities, and this provides benefits to the whole class (Shamir & Korat, 2015).

In some studies in the relevant literature, it has been determined that ebooks can improve children’s language skills and literacy skills in terms of phonological awareness, word recognition, and fluency (Blok et al., 2002; Castek et al., 2006; Korat & Shamir, 2007; Lefever-Davis & Pearman, 2005; Plowman & Stephen, 2003; Valmont, 2000; Van Kleeck, 2003; Wepner & Ray, 2000, cited by Ciampa, 2012b). It was determined that ebooks were commonly used in children’s literacy learning process and had positive effects on literacy performance (Lee, 2017; Dore et al., 2018); in addition, it was also determined that the use of ebooks in language teaching had a positive effect on developing students’ listening comprehension skills (Hsieh & Huang, 2020).

In the study conducted by Lin (2010), it was determined that ebooks have a positive effect on the reading attitudes of students. Research results have shown that the features of ebooks, such as oral reading, highlighting, animations, and music/sound effects are effective in changing the attitudes. As a result of the study conducted by Kelley (2011), it was found that ebooks improve the reading comprehension skills of students. In certain studies (Greenlee-Moore & Smith, 1996; Matthew, 1997), it was found out that the use of interactive CD-ROM storybooks may help to improve the reading comprehension skills of elementary students. In a way that supports this, Doty et al. (2001), in their study, compared the reading comprehension scores of students who read the printed book form and an interactive CD-ROM storybook of the same book and determined that the scores of students who read the interactive CD-ROM storybook were higher. The relationship between vocabulary teaching, which is one of the important components of reading comprehension and language teaching, and ebooks was also examined, and it was determined that ebooks could be used effectively to facilitate the acquisition of words in different meanings and that this contribution could be increased with the support of adults and dynamic dictionary support (Korat et al., 2014). In another study, ebooks that include dictionaries providing animated presentations and verbal descriptions were emphasized to be useful for vocabulary learning. The main result of this study showed that both children with specific language impairment and children with typical language development used ebooks and that children could learn new words at different levels when ebooks were well designed (Korat et al., 2019). In a study conducted with students with learning difficulties, a collaborative ebook with animation content was used, and it was observed that there was an increase in students’ accurate reading performance and a significant improvement in their reading comprehension performances with the use of ebooks (Özer Şanal, 2020). Homer et al. (2014; cited by Chang et al., 2019) indicated that reading an interactive ebook improved students’ use of cognitive strategies, for example, active decoding, and effectively improved their reading performance. In some studies, it is found that electronic text reading was positively related to children’s reading motivation (Ciampa, 2012a; Picton, 2014).

Based on these findings, it can be said that ebooks can be used as important tools that keep the interest and motivation for reading, in reading education, alive. Ebooks can play an effective role in increasing students’ willingness to read and in establishing reading habits.

Turkish teachers have important responsibilities in making secondary school students acquainted with the concept of book and developing reading skills. Therefore, what kind of perspectives preservice Turkish teachers (PTTs) have with respect to digital reading and how they perceive ebooks apart from printed books can be used as important data to make inferences about the applications they will perform in reading education.

Metaphor

The metaphor is one of the most powerful tools that can be used in revealing people’s perceptions toward any concept. According to Perry and Cooper (2001), the metaphor is the expression of something unknown with the known things. Metaphors are the expressions of concept maps in the nonlinguistic world in language. From Aristotle’s point of view, the metaphor is the use of production of a language that does not correspond to a being (Erdem, 2003). According to the conceptual metaphor theory, the metaphor is not a language quality regarding the style, but the thought itself is a metaphorical phenomenon (Evans & Green, 2006). In cognitive linguistics, the metaphor is defined as the understanding of a conceptual field with another conceptual field (Kövecses, 2010). Similarly, researchers, who indicate that the metaphor is the product of both language and thought, whether it is a literary work or not, and call it conceptual mappings (Kövecses, 2010; Lakoff, 1993), name the linguistic transfers of the relevant concept metaphorical expressions. In this study, data collected from PTTs are essentially metaphorical expressions. The categories determined by the researchers are a study aimed at determining the conceptual metaphor. Metaphors are the units that also include the user’s experiences in the nonlinguistic world.

By considering this feature of metaphor, studies were conducted to determine the metaphors and opinions of preservice teachers regarding various concepts. One of these concepts is ebook. In some studies, in which the metaphorical perceptions and opinions of preservice teachers regarding the concept of ebook were examined, it was determined that preservice teachers studying in the Department of Computer and Instructional Technology Education (Özer & Kılıç Türel, 2018); in addition, it was also determined that the use of
investigates the perceptions of an individual and the meanings attributed to incidents. Phenomenology is a descriptive study. In this context, it is important to define phenomena, rather than making a generalization (Bay & Akturan, 2008).

In phenomenology studies, how people perceive and interpret the phenomenon, what they feel about the phenomenon, and how they remember it are focused on (Patton, 2014). Furthermore, data sources are individuals or groups that experience the phenomenon that the study focuses on and that can express or reflect this phenomenon (Yıldırım & Şimşek, 2005). The ebook was selected as a phenomenon in the study conducted in this context, and the perceptions of ebooks and the meanings attributed to them by PTTs, who play an important part in developing the skills of reading, reading comprehension, and reading habits, and therefore, who are associated with ebooks due to their profession, were investigated. In this context, metaphors were used as a tool that would help them define the phenomenon in question. Metaphors have a figurative meaning, and figurative meanings are a way for an individual to understand and interpret a concept, a phenomenon. According to Morgan (1980), Sterman (1985), and Sackmann (1989), figurative meaning is a language form in which a concept or a term is applied to a different content to express a certain similarity. Figurative meanings take phenomena from one field to the other, filter the truth, and define it simply. Figurative meanings are quite effective in defining the important features of complex variables in a simple format (cited by Yıldırım & Şimşek, 2005). In the study, it was ensured that the ebook is given meaning as a variable by PTTs through metaphors by being associated with different concepts; therefore, it was thought that it would be possible to reveal the thinking patterns that restrict or activate the actions of preservice teachers in relation to the variable of ebook.

**Method**

**Research Design**

This study was designed according to phenomenology, one of the qualitative research methods. The phenomenology design provides a suitable research ground for studies aimed at investigating the facts with which we are not entirely unfamiliar but, at the same time, the full meaning of which we cannot grasp (Yıldırım & Şimşek, 2005). Phenomenology is suitable for use in studies that aim at investigating the phenomena about which we do not have in-depth information, but which do not sound unfamiliar to us and which we cannot fully understand (Creswell, 2014). Phenomenology is a method that seeks the answer to the question, “What is reality?” The phenomenology approach is based on personal experiences. In this approach, the researcher is interested in the personal (subjective) experiences of the participant and

**Participants**

In this study, 150 preservice teachers studying at Çukurova University, Faculty of Education, Turkish Education Department participated. The participants were determined using the criteria sampling method, one of the purposeful sampling methods, and it was aimed to collect data from preservice teachers studying in the first, second, third, and fourth grades of the Turkish Education Department. It was considered that preservice teachers volunteered to participate in the study on a voluntary basis. The distribution of PTTs included in the participants by gender and grade levels is presented in Table 1.

As it is seen in Table 1, 67 of PTTs constituting the participants were male, and 83 of them were female. On the contrary, when PTTs are examined in terms of grade levels, it is observed that 30 of them are in the first grade, 36 of them are in the second grade, 43 of them are in the third grade, and 41 of them are in the fourth grade.
Data Collection

The metaphor analysis includes metaphor elicitation from written or oral texts, or experimental (guided) metaphor elicitation among data collection ways (Cameron & Low, 1999; Cameron & Maslen, 2010; Ellis & Barkhuizen, 2005; Wan & Low, 2015 cited by Peçenek, 2015). The data of this study were collected with the experimental metaphor elicitation technique. In experimental metaphor elicitation, participants are asked to produce a metaphor (“A [TARGET AREA] is B [SOURCE AREA]”), or a simile (“A [TARGET AREA] is like B [SOURCE AREA]”) with the help of directives (Peçenek, 2015, p. 32). In this context, a semi-structured form was prepared, and PTTs were asked to create a simile such as (“E-book [TARGET AREA] is like . . . . . [SOURCE AREA.”) in this form. Within the scope of the study, the data collection process was held by the researcher in the first session of one of the lessons given at the first-, second-, third-, and fourth-grade levels.

Information about the aim of the study, and the metaphors, was primarily given to PTTs during the data collection process and emphasized that the metaphor is the explanation of a concept or phenomenon by likening it to another concept or phenomenon and gave examples of the use of metaphors. Furthermore, opinions about what the ebook is and how it is used were exchanged. In this process, personal opinions were not shared in order not to influence PTTs’ thoughts and to direct them, and the definitions in the literature were used. Thereafter, semi-structured forms with the statement of “E-book is like . . . . . . . . because . . . . . . . . . .” were distributed to PTTs participating in the study to reveal their metaphorical perceptions of ebook. In this form, blanks were left in which PTTs could write their gender and grade levels.

It was emphasized that the data obtained could only be used for research purposes, and PTTs were given 30 min to fill out these forms. The example of the form used for collecting the data is presented below:

Data Analysis

Data were analyzed using the content analysis technique. The analysis process was performed by taking into account the coding and sorting stage, sample metaphor compilation stage, category development stage, and the stage of ensuring validity and reliability (Creswell, 2014; Saban, 2008).

Coding and Sorting

Coding and sorting were first performed while analyzing the data. In this stage, the metaphors produced by PTTs were listed, and whether the metaphors written clearly expressed the metaphor was taken into account. Thereafter, each metaphor indicated by PTTs (e.g., wristwatch, bag, and brain) was coded. When the metaphors written by PTTs were examined, it was observed that there were five forms in which the metaphor was not explained by any logical reason and these forms were excluded from evaluation.

Sample Metaphor Compilation

In this stage, 150 valid metaphors obtained after the sorted metaphors were listed again, and each form was coded as PTT 1, PTT 2, and so on, to order PTTs’ data. Thereafter, the sample metaphor statement that best represented each metaphor was selected. Thus, the sample metaphor list was created. This list was used while deciding under which categories metaphors would be collected.

Category Creation

In this stage, the metaphors produced by PTTs for ebook were examined in terms of common characteristics. A total of 150 different metaphors for ebook were analyzed in terms of the subject of the metaphor, the source of the metaphor, and the relationship between the subject and the source of the metaphor. It was determined that the metaphors examined were collected in eight categories in terms of their common characteristics.

Ensuring Validity and Reliability

In this stage, the analysis process of the data was explained in detail to ensure validity and the metaphors and categories determined were included in the “Findings” section. Nevertheless, direct quotations were given from PTT’s opinions while presenting the findings. The code numbers (e.g., PTT 10, PTT 46, and PTT 93) assigned to each PTT were used while transferring the quotations, and the identities of PTTs were kept secret.

For reliability, a field specialist other than the researcher was consulted for his opinions to determine whether eight categories and the metaphors under them represented the relevant conceptual category, and then the analyses performed by the researcher and field specialist were compared and the cases in which there were dissensus or consensus were determined. In this context, Miles and Huberman’s (1994) formula (Reliability = Consensus/consensus + Dissensus × 100) was used, and it was determined that the percentage of
agreement between the researchers was 96.6% (145 consensus and five dissensus).

Findings

The metaphors produced by PTTs for ebook were primarily analyzed in terms of having positive and negative meanings, and the results are presented in Table 2.

As it is seen in Table 2, it was determined that 134 (90%) of 150 PTTs produced metaphors with positive meanings for ebook and 16 (10%) of them produced metaphors that can be considered as negative. When positive metaphors are examined, it is observed that the most commonly used metaphors were wristwatch (14), water (10), credit card (9), plane (6), store (6), wallet (6), bag (5), and USB (4):

“E-book is like a wristwatch because we can always carry it with us.” (PTT 18)

“E-book is like water because, just as water is required to live, e-book is also required in the technological age.” (PTT 61)

“E-book is like a credit card because you reach your needs easily.” (PTT 144)

“E-book is like a plane because it is the fastest way to access information.” (PTT 10)

“E-book is like a store because it has an endless storage capacity.” (PTT 78)

“E-book is like a wallet because, just as we take money out of our wallet when we need, we can use an e-book to reach the information in case of need.” (PTT 23)

“E-book is like a bag because we always carry information with us.” (PTT 46)

“E-book is like a USB because I fit as much information as the world into it.” (PTT 93)

It was determined that PTTs produced 16 different metaphors with negative meanings. One of the PTTs who produced negative metaphors wrote that “E-book is like a salt-free meal because, just as a salt-free meal has no taste, reading will not be enjoyable if there is no paper” (PTT 2). Another one produced a negative metaphor by stating that “E-book is like a photocopy because it never gives the taste of a book” (PTT 39). While one of the PTTs produced the negative metaphor of “E-book is like a fluorescent lamp because it strains my eyes as I look at it” (PTT 81), another one produced the metaphor of “E-book is like an electronic cigarette because it makes children addicted to technology” (PTT 82).

The metaphors of PTTs for ebook were collected under the categories of facilitating, information source, accessible, portable, requirement, inadequate, attractive, and harmful, and the metaphors under each category and the number and percentage of PTTs who developed each metaphor are presented in Table 3.

As seen in Table 3, eight categories emerged from the metaphors produced by PTTs for ebook. These categories are, namely, facilitating, information source, accessible, portable, requirement, inadequate, attractive, and harmful. It is observed that PTTs mostly produced metaphors for ebook in the facilitating (26.6%) category, followed by the

| Category                  | Name of metaphor                  | Total |
|---------------------------|-----------------------------------|-------|
| Positive metaphors        | Wristwatch (14)                   |       |
|                           | Water (10)                        |       |
|                           | Credit card (9)                   |       |
|                           | Plane (6)                         |       |
|                           | Store (6)                         |       |
|                           | Wallet (6)                        |       |
|                           | Bag (5)                           |       |
|                           | USB (4)                           |       |
|                           | Skeleton key (4)                  |       |
|                           | Money (4)                         |       |
|                           | Guide (4)                         |       |
|                           | Brain (4)                         |       |
|                           | Toy (3)                           |       |
|                           | Food processor (3)                |       |
|                           | Friend (3)                        |       |
|                           | Internet (2)                      |       |
| Negative metaphors        | Fluorescent lamp                  |       |
|                           | Virtual game friend               |       |
|                           | Breadless meal                    |       |
|                           | Salad without sauce               |       |
|                           | Mobile library (2)                |       |
|                           | Ready meal (2)                    |       |
|                           | Vacuum storage bag                |       |
|                           | Money in the phone case           |       |
|                           | Additional paper in the exam      |       |
|                           | An unlimited treasure             |       |
|                           | Portable chair                    |       |
|                           | Fruit tree in the garden          |       |
|                           | Wireless access                   |       |
|                           | Calculator                        |       |
|                           | Small library                     |       |
|                           | Make-up bag                       |       |
|                           | A big box                         |       |
|                           | Mobile phone                      |       |
|                           | Fruit juice                       |       |
|                           | Toolbox                           |       |
|                           | Electronic cigarette              |       |
|                           | Salt-free meal                    |       |
|                           | Secondhand market                 |       |
|                           | Reflection in the mirror          |       |
|                           | Encyclopedia                      |       |
|                           | Sky                               |       |
|                           | Glasses                           |       |
|                           | Key                               |       |
|                           | Armchair                          |       |
|                           | Copy                              |       |
|                           | Savior                            |       |
|                           | Water bottle                      |       |
|                           | Blessing                          |       |
|                           | Ocean                             |       |
|                           | Powerbank                         |       |
|                           | Clock                             |       |
|                           | Clock                             |       |
|                           | Packing case                      |       |
|                           | Thermos                           |       |
|                           | Star                              |       |
|                           | Train                             |       |
|                           | Light                             |       |
|                           | Artificial flower                 |       |
|                           | Lazy student                      |       |
|                           | Photocopy                         |       |
|                           | Noise                             |       |
|                           | USB                               |       |
|                           | Pacifier                          |       |
|                           | Portrait                          |       |
|                           | Diet                              |       |

Note. USB = Universal Serial Bus.
information source and accessible (18%) categories. The categories in which PTTs produced the least number of metaphors for ebook were the attractive (2.7%) and harmful (2.7%) categories.

When the metaphors in the facilitating category are examined, it is observed that PTTs mostly used the credit card (9) metaphor, followed by the plane (6), skeleton key (4), money (4), and guide (4) metaphors. The information source category is another one of the categories including the metaphors produced by PTTs. It was observed that the store (6) metaphor was mostly produced for the information source category. This metaphor is followed by the brain (4) and bag (4) metaphors. It was determined that the wristwatch (11) and water (5) metaphors were mostly produced for the accessible category, followed by the ready meal (2), mobile library (2), and internet (2) metaphors.

It was determined that PTTs mostly used the wallet (4) metaphor in the portable category, followed by the wristwatch (3), and USB (3) metaphors. While the water (5) and friend (3) metaphors were mostly produced by PTTs in the requirement category, the toy (3) metaphor was mostly produced by PTTs in the attractive category.

The metaphors with negative meanings produced by PTTs for ebook were collected in the inadequate (8%) and harmful (2.7%) categories. In Table 3, it is observed that there are 12 different metaphors in the inadequate category: salt-free meal, virtual game friend, photocopy, diet, artificial flower, and so on. A similar situation is also valid for the harmful category. It is observed that there are also four different metaphors in this category: fluorescent lamp, electronic cigarette, light, and noise.

The examples of metaphors produced by PTTs and in different categories are as follows:

"E-book is like a guide because it allows us to find our way at any moment.” (PTT 86)

"E-book is like a sky because an e-book also has unlimited resources like millions of stars in the sky.” (PTT 95)

"E-book is like a savior because it allows us to reach expensive books.” (PTT 99)

"E-book is like a drug because it rescues us when we get in a difficult position.” (PTT 20)

"E-book is like a vacuum storage bag because the function of the contents does not change, but the space they take up is reduced.” (PTT 103)

"E-book is like diet because, just as diet is eating by being deprived of it, the e-book is also reading by being deprived of the smell of a book.” (PTT 112)

"E-book is like a toy because it is enjoyable and attractive.” (PTT 132)

"E-book is like noise because attention is lost while studying if there is noise, and different colors, page layout, and images distract attention while reading an e-book.” (PTT 148)

Table 3. Distribution of Preservice Turkish Teachers’ Metaphors for Ebook by Categories.

| Category       | Metaphor                  | f   | %  |
|----------------|---------------------------|-----|----|
| Facilitating   | Credit card (9)           | 40  | 26.6|
|                | Plane (6)                 |     |     |
|                | Skeleton key (4)          |     |     |
|                | Money (4)                 |     |     |
|                | Guide (4)                 |     |     |
| Information source | Food processor (3)      |     |     |
|                | Money in the phone case   |     |     |
|                | Wireless access           |     |     |
|                | An unlimited treasure     | 27  | 18  |
|                | Small library             |     |     |
|                | Makeup bag                |     |     |
|                | A big box                 | 19  | 12.7|
|                | Mobile library (2)        |     |     |
|                | Internet (2)              |     |     |
| Accessible     | Wristwatch (11)           | 17  | 11.3|
|                | Water (5)                 |     |     |
|                | Ready meal (2)            |     |     |
| Portable       | Wallet (4)                | 12  | 8   |
|                | Vacuum storage bag        |     |     |
|                | Portable chair            |     |     |
|                | Mobile phone              |     |     |
| Requirement    | Water (5)                 | 4   | 2.7 |
|                | Friend (3)                |     |     |
|                | Star                      | 4   | 2.7 |
| Inadequate     | Salt-free meal            |     |     |
|                | Breadless meal            |     |     |
|                | Salad without sauce       |     |     |
| Attractive     | Toy (3)                   |     |     |
| Harmful        | Fluorescent lamp          |     |     |
| Total          |                           | 150 | 100 |

Note. USB = Universal Serial Bus.
Discussion and Conclusion

As a result of the study in which it was aimed to determine the perceptions of PTTs toward ebook through metaphors, it was found that the metaphors with positive qualities in terms of meaning were mostly produced. It was observed that the metaphors, such as wristwatch, wallet, bag, water, store, USB, and credit card were used as positive metaphors. For example, positive characteristics of ebook were emphasized through metaphors, such as “E-book is like a wristwatch because we can always carry it with us” (PTT 18), or “E-book is like a wallet because, just as we take money out of our wallet when we need, we can use an ebook to reach the information in case of need” (PTT 23). In some studies determining that ebook makes positive contributions to language development, which supports this finding, ebook activities were determined to support phonological awareness in children (Chera & Wood, 2003; Littleton et al., 2006; Olson & Wise, 1992; Shamir, 2009; cited by Shamir et al., 2012). In the study carried out by Öztürk and Can (2013), fifth-grade students were asked about the benefits of electronic books and the students emphasized that ebooks made it easier to learn and remember and enabled them to understand. Similarly, according to Clarfield and Stoner (2005), computer-based reading education is effective because it is combined with rapid feedback opportunities and allows for individualized and attractive teaching.

It was determined that PTTs mostly produced metaphors for ebook in the facilitating (18%) category. The relevant literature also supports the facilitating category determined based on the metaphors indicated by PTTs. Indeed, Scheiter and Gerjets (2007) argue that readers are more interested in digital reading, in other words, this new form of reading, as it directs the reader to more active reading and makes it easier to read for readers. Moreover, according to Clarfield and Stoner (2005), multimedia-supported post-reading activities make it easier for students to get instant feedback, and fast feedback is one of the strongest advantages of the program. Similarly, in a study carried out by Ota and DuPaul (2002), it was determined that this feedback feature was an important reason for the amusement perceived from multimedia-based reading activities for students. Furthermore, multimedia platforms are influential because they include the multiple presentations of the relevant content, such as text, sounds, images, and animations (Eshet-Alkalai, 2004). The fact that the written text is supported by different materials helps students in the imagination and comprehension of complex images and increases students’ interest and motivation toward learning and scientific curiosity (Yeung, 2004). In the study carried out by Pabrua Batoon et al. (2018), it was determined that ebooks help support the learning process and that the creation of technological resources, such as ebooks, allows determining not only what students need to learn, but also their needs for how they learn; therefore, it is facilitating in this respect. Nevertheless, in certain studies (Aydoğan, 2014; Hatipoğlu, 2011; Önder, 2010; Topbaşoğlu, 2015), it was determined that the most emphasized feature of the definition of an ebook with regard to its facilitating feature is the ease of using its interface.

Within the scope of the study, another category in which the most metaphors were produced for ebook was the information source (18%) category. It can be said that this is due to the informative nature of the concept of the book, beyond being printed or digital. When the perceptions of primary and secondary school students of the book were examined by Bektas et al. (2014), metaphors were mostly determined in the “book as information source” category. The fact that reading is an action based on understanding can also be effective in perceiving ebook as an information source and comparing it with the printed book in this respect. In this context, in many studies carried out (e.g., Kerr & Symons, 2006; Mangen et al., 2013; Verdi et al., 2014 cited by Singer & Alexander, 2017), the contributions of a printed book as information source and ebook to reading comprehension, and which one of them is more effective in terms of understanding were investigated. In the study conducted by Doty et al. (2001), it was determined that students who read the interactive CD-ROM storybook form of the same book had higher reading comprehension scores than students who read the printed book form. Reading ebooks enriches the mental schemes and raises the level of comprehension. In particular, audio and video presentations enrich the mind by feeding it (Güneş & Susar Kırımızi, 2014).

One of the categories obtained based on the metaphors produced by PTTs is the accessibility category. In the study carried out by Sevimli and Kul (2015), it was observed that one of the intended uses of technology was access to the information category. Furthermore, in the questionnaires in which the attitudes toward the use of ebooks were investigated, it was determined that students had opinions about ebooks, such as being 24/7 accessible, having drivers that allow a full-text search, and facilitating storage (Chu, 2003). Similar findings were obtained in the results of certain studies, and it was determined that the fact that students can easily access ebooks using internet search engines (Cumaoğlu et al., 2013) and the opportunity to access many materials every time and everywhere are among the reasons for preferring ebooks (Gunter, 2005; Wilson, 2003). When talking about the advantages of ebooks, Aydoğan (2014) stated that they can reach places that are difficult or even impossible to reach, they are in circulation all over the world, and they can reach people from different nations. Hatipoğlu (2011) expressed the advantages of ebooks as the fact that the reader software facilitates taking notes in different parts, marking and navigating, finding the information that is searched for with a single click in the help menu as ebooks develop, and that it facilitates obtaining more detailed information.

In the study, the other positive categories determined by examining the metaphors of PTTs for ebook were observed...
to be the portable, requirement, and attractive categories. It was determined that PTTs mostly produced the wallet (4), wristwatch (3), and USB (3) metaphors in the portable category; the water (5) and friend (3) metaphors in the requirement category; and toy (3) metaphor in the attractive category. In their study, Christianson and Aucoin (2005) investigated the use of ebooks at California State University and emphasized the portability of ebooks.

Within the scope of the study, it was emphasized in the literature that ebooks can meet the individual learning, social, and psychological needs of students in such a way that they support the category of need that emerged for ebooks. The internet further allows for the control of students while they are surfing in rich sources of information, such as online ebooks, and are structuring meanings appropriate to their learning needs (Pearman, 2008). Most of the computers not only motivate students but also can be easily customized for individual learning needs (Chambers et al., 2001; Irasquin et al., 2005). Scheiter and Gerjets (2007) argued that digital reading meets the social and psychological needs of readers in a wider range and ensures the maintenance of attention. Nowadays, one of the cases in which some students have difficulty to overcome is the inability to concentrate while reading and to sustain attention. When reading from the screen is systematically developed, it activates various regions of the brain and improves skills, such as attention, decision-making, and controlling complex thoughts at the highest level (Güneş, 2010). In this context, the use of ebooks in reading education may contribute to individual differences and needs of students, who learn in different ways and keep and maintain their attention in different forms, and to sensitive teaching.

As a result of the study, it is an attractive category, which is one of the categories obtained based on the metaphors for the ebook. In a way that supports this finding, Önder (2010) stated that ebooks make reading interesting during the time spent on the computer by encouraging reading while Hatipoğlu (2011) expressed the idea that ebooks not only make education interesting with rich audio and visual designs thanks to technological facilities, but also increase learning. In this respect, online children’s storybooks take an important place as the tools containing multimedia and multisensor features, such as animated pictures and sound effects, along with traditional verbal or written stories (Ciampa, 2012a). These features provide children and readers, who have difficulty in reading, with interactive storybook options through which they can have fun independently by reading (Castek et al., 2006). According to Scheiter and Gerjets (2007), this new form of reading makes reading a more creative activity that is full of games. Interactive features in children’s ebooks make reading more interesting, in addition to giving a child an educational experience, and have the potential to teach children while entertaining (Ersan, 2014).

When the metaphors produced by PTTs and their reasons for metaphors were examined, it was determined that some PTTs had negative perceptions toward ebooks. These negative perceptions were collected under the inadequate and harmful categories. It was determined that the inadequate category included metaphors such as salt-free meal, virtual game friend, photocopy, diet, and artificial flower, and the harmful category included the fluorescent lamp, electronic cigarette, light, and noise metaphors. For example, one of PTTs produced the metaphor of “E-book is like diet because, just as diet is eating by being deprived of it, the e-book is also reading by being deprived of the smell of a book” and the reason while expressing opinions about the ebook. In some studies carried out, similarly to the research findings, unfamiliarity to ebooks was also mentioned. For example, according to the questionnaires of Jisc Collections (2009) and The Ebrary (2007), alienation and unfamiliarity to ebooks, and inadequacy in understanding the interfaces of complex ebooks are the reasons why printed books are more preferred than ebooks for reading (Mulholland & Bates, 2014). Although some researchers have believed that ebooks are effective tools, they have argued that interactive features in ebooks distract students from the story line (Dündar & Akçayır, 2012; Korat & Shamir, 2007; Sehn & Fragsos, 2015).

Within the scope of the study, some students reached the harmful category from the negative metaphors they produced, and these students expressed opinions that ebooks are harmful by using metaphors, such as fluorescent lamp, electronic cigarette, light, and noise. For example, a PTT expressed his opinion by saying “E-book is like diet because, just as diet is eating by being deprived of it, the e-book is also reading by being deprived of the smell of a book” and the reason while expressing opinions about the ebook. Some research results also support this finding. As a result of their study, Macedo-Rouet et al. (2003) determined that students felt more tired when reading on the screen, which may be due to the screen contrast and resolution of the ebook. Similarly, Kang et al. (2009) determined that reading ebooks caused eye fatigue at higher levels compared with traditional book reading.

As a result of the study, it was determined that PTTs produced different metaphors, most of which had positive meanings for ebooks and that the metaphors of PTTs were collected under the categories of facilitating, information source, accessible, portable, requirement, attractive, inadequate, and harmful. It was determined that PTTs mostly produced metaphors in the facilitating category, followed by the information source and accessible categories. The rapid change in technology and the digital transformation caused by it in the education and training process differentiate the design of the process of developing language skills and the language teaching tools used in language teaching, which requires the presence of Turkish teachers who consider developing reading skills, one of the language skills, in the e-learning environment by taking it out of the traditional context, and also through technological tools with different features such as ebooks. Nowadays, especially cases, when distance education is inevitable,
may increase Turkish teachers’ interest in ebooks by further strengthening the importance of ebooks in reaching the achievements for accumulation to be gained by reading and for reading comprehension.

**Recommendations**

The following recommendations were made by considering the findings obtained as a result of the study:

Teachers occasionally have problems with respect to using technology in their courses and cannot fully acquire the competence based on integrating their courses with technological innovations. Indeed, although the International Society for Technology in Education (ISTE) expects fluency in technology systems from teachers, teachers do not meet these expectations (Hutchison & Reinking, 2011). Thus, it can be ensured that PTTs are more conscious and motivated in this regard by providing information on how to use ebooks in courses such as the Instructional Technologies and Material Design course. Furthermore, it is possible to carry out studies that will emphasize the positive features of ebooks, such as information source, facilitating, accessible, portable, attractive, economic, and so on, and applications that will make the use of ebooks attractive by taking into account preservice teachers’ negative perceptions about ebooks under the “inadequate” and “harmful” categories. On the contrary, PTTs can also be encouraged to establish classroom and school libraries containing printed sources, such as books, magazines, newspapers, and so on, and to create digital libraries when they start teaching.

Nowadays, when the definition and applications of literacy have changed, the fact that preservice language teachers are aware of digital literacy and bring it to language teaching classes may contribute to performing more effective language teaching for the development of the reading skill. In this context, ebooks containing digital texts may be a good alternative, especially for students with different learning styles. For this reason, the acquisitions and activities for the development of digital reading can be included in the Turkish lesson curriculum. Furthermore, teacher’s guides on how an ebook can be used as a teaching material in reading education can be prepared. Moreover, reading comprehension questions prepared with respect to ebooks can be used while performing assessment and evaluation activities in reading education.

The underlying reasons for barriers, if any, and negative perceptions regarding the use of ebooks of language teachers who are currently teaching, apart from pre-service Turkish teachers, can be investigated in the studies to be carried out. Thus, the content of in-service training to be given to teachers can be organized more effectively.

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