Formation of school student's vocabulary skills through innovative technologies

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Abstract

The aim of this research is to determine the attitudes of elementary school 4th graders regarding electronic books developed through innovative technologies in the development of vocabulary. Qualitative research methods were used in accordance with the purpose of the research. The data of the research were collected by the semi-structured interview form developed by the researcher. The study involved 20 elementary school 4th graders studying in Almaty, Kazakhstan in the 2019-2020 academic year. As a result of the research, it was concluded that students have a moderate tendency to read electronic books and have a tendency to prefer electronic books as much as printed books. In addition, students found electronic books to be easily accessible, easy to learn and advantageous with their ability to be easy to learn, while they found themselves disadvantaged in terms of easy concentration, eye strain and technology addiction. Based on the results of the research, it is recommended to improve electronic books through innovative technologies and to carry out studies on increasing the use of electronic books by students.

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1. Introduction

The technological age we live in has changed the structure of education systems. Learning and teaching activities implemented in educational environments have benefitted from the positive effects of technology. In the age we live in, the need and desire to access resources in a more practical way anytime and anywhere is increasing day by day (Sancar, Tozkoparan and Odabasi, 2017). While the development of information and communication technologies has accelerated in recent years, the widespread use of the internet has led to changes in educational activities (Cabi, 2015). Changing needs and developments in science and technology have enabled program development activities to be fast (Ozdemir, Hamzaoglu, 2016). The technology, which also has an effect on the production of information, has developed an alternative to printed books used for centuries and has enabled the use of electronic books (Sarikaya, 2018).

The development of the vocabulary of the students and the effective acquisition of reading skills by understanding have a significant impact on school success. Multi-intellectual skills, in which vocabulary and other language skills are centrally important, have become one of the pillars of full participation in mainstream tech societies (Hoover and Gough, 1990).

One of the most effective ways to enable primary school students to develop their vocabulary through innovative technologies is to enable them to benefit from electronic book applications.

1.1. Theoretical and conceptual framework

In recent years, the definition of an e-book has been expanded to include book titles as a file that is available online, can be read as an email, can be received by a portable electronic reading device or downloaded to a computer (Carvajal 1999, Allen 2000, Clister 1999).

With the multifaceted place of the digital world in people's lives, the publishing sector has started to develop in this field. However, reading habits have become increasingly digital (Fedigan, 2011).

Another recent interpretation of an e-book is the book "print on demand", in which content is stored in a system connected to a high-speed, high-quality printer, and printed and hardcover copies are produced on demand. (Hawkins 2000).

Another recent interpretation of an ebook is a "print-on-demand" book, in which content is stored in a system connected to a high-speed, high-quality printer. Hard-copy and hardcover copies are produced on demand. (Hawkins 2000).

The functionality of electronic books has features that can support children's literacy development. Its features that can give children access to stories, including multimedia additions, interaction and legibility of the story, have a significant impact on their ability to expand their vocabulary and gain reading skills (De Jong 2003).

Electronic book technology consisting of software, hardware, standard and protocol components, together with a number of advantages and disadvantages, has led many new e-book reading devices to enter our academic and everyday lives. Today, e-books are developing in the fields of publishing, education and information services and appealing to a wider audience with their increasing number. It is inevitable that this technology, which is discussed as an alternative to printed books,

will change the way we acquire and disseminate information over time (Anameric and Rukanci, 2003).

The most important feature that distinguishes electronic books from printed books is that they contain multimedia elements such as audio, video, connectivity, interaction and allow interaction with the user. The interactive nature of electronic books positively affects students' learning processes (Grant, 2004). Reading e-books is becoming more and more common among young people as it is a fun hobby. For this reason, solutions should be developed to identify the difficulties that children encounter while doing e-reading and they must be eliminated (Miller & Waschauer, 2014).

Reading attitude is the value that people give to reading. When students' attitudes towards reading are described, problems related to reading can be identified and solutions can be sought (Balci, 2009). Expanding students' vocabulary through electronic books that can be defined as a product of innovative technologies is an important step that can be taken to meet educational needs in the age of technology.

1.2. Related research

The successful integration of learning technologies into education has an effective power in meeting learning needs (Ozdamli, Uzunboylu, 2015). Adapting innovative technologies to teaching applications stops the need for a deep examination of technology integration with different variables (Yilmaz, Yilmaz, Ozturk, 2017). Opinions regarding electronic books available via the Internet raise some discussions about creating favorable conditions for their use in educational activities. Considering that children from a young age are exposed to computers and the internet at home and school, educational use of time spent on technology will provide a significant advantage in children's development. The increasing inclusion of electronic books, which are innovative technology products, in the lives of students and the creation of suitable conditions for this will play an active role in the expansion of their vocabulary (Perzylo, 1993).

In his research examining the impact of electronic books on learning, Larson (2010) explains that the reading skills of young readers who use electronic books in primary education are developing faster. The study found that the electric book encourages students to read more than the printed book and increases interaction with texts. In addition, Mouri and Rahimi (2016) demonstrate that technology-based software is a superior and more effective option in the development of vocabulary than traditional textbooks.

In his research on the purposes of electronic books among students, Gunter (2005) found that students use electronic books to do research, study and learn about online news and course-related topics. In the study, it was concluded that students prefer story, novel and poetry books as electronic books at a low rate. It was also found that the majority of the students who participated in the study did not like to read long texts from the screen. In his study, Lin (2010) found that eBooks had an effect on reading attitudes, and noted that the control and interaction provided to the learner, especially in eBooks, was effective in the positive change in attitude. Research results by Wilson and Landoni (2001) show that users do selective readings with eBooks, including research and screening Activities.

When looking at the prepared e-books, it is seen that many of them are only electronic versions of printed books. However, e-books bring with them many opportunities provided by computer-aided education. In particular, multimedia supports that make computer-aided education superior to many methods can also be used in e-books. Renshaw and Taylor (2000) note that properly designed

computer-aided teaching can positively affect students' high-level cognitive abilities, but this effect will not be the same for every student.

Innovative technologies show that, in addition to continuing to produce printed books, they will gradually be replaced by ebooks. In their research on the use of technology in education, Keles, Oksuz and Bahcekapili (2013) stated that electronic books enriched in content have many superior aspects compared to printed books. It is thought that users will prefer ebooks, since ebooks with user-friendly interfaces supported by multimedia elements are produced. In this direction, the effect of electronic books in the development of vocabulary of elementary school students through innovative technologies was the subject of this research and it was important to evaluate the attitudes of primary school students regarding electronic books.

1.3. Purpose of the research

With the widespread use of technology, the status of reading and accessing books has also changed. Although printed books continue to be widely used today, eBooks are now widely used. The aim of this research is to determine the attitudes of elementary school 4th graders regarding electronic books developed through innovative technologies in the development of vocabulary.

The sub-objectives created accordingly are given below.

1. What are the views of primary school 4th graders regarding their e-book reading habits?

2. What are the views of primary school 4th graders regarding their preferences for reading e-books and reading printed books?

3. What are the views of 4th graders on the advantages of reading e-books?

4. What are the disadvantages of reading e-books for elementary school 4th graders?

2. Method and Materials

In this section, the model of the research, the study group, the method followed, the data collection tool, the application of the data collection tool, the methods of analysis of the data obtained are emphasized.

2.1. Research methods

This research, in which primary school 4th grade students' attitudes towards the development of vocabulary through electronic book reading were evaluated, designed and implemented with a qualitative research approach. Qualitative research, as a research approach that starts with assumptions. It involves studying research questions to discover the goals of individuals or groups in a problem attributed as an interpretative/theoretical framework and a social or human problem (Hughes, 2016).

Research data were collected and evaluated in accordance with the phenomenological design. Phenomenological studies are concerned with how people experience the world at a particular time and in a particular context. In other words, phenomenological studies aim to describe, understand

and interpret the structure of phenomena that occur in consciousness as a result of the interaction of the individual with the world (Cilesiz, 2011).

2.2. Participants

Easily accessible case sampling, one of the purposive sampling methods, was used in the research. The depth and width of the data considered to be obtained in qualitative research is inversely proportional to the size of the sample. It is not healthy to work with a large number of individuals due to the sample size, the characteristics of information collection and analysis methods, the amount of data, and the limitations of resources (Onwuegbuzie and Leech, 2007). For this reason, the sample group consisting of research participants consisted of 20 4th grade students which enabled the researchers to collect and evaluate the data in a healthy way. The study group of the research consists of 20 primary school 4th grade students studying in Almaty, Kazakhstan, in the 2019-2020 academic year and voluntarily agreed to participate in the research. Demographic characteristics of the students are included in the findings section.

2.3. Data collection tools

In the research, in order to determine the opinions of the 4th grade primary school students about reading electronic books, basic questions about the subject were formed and transformed into a form. A semi-structured interview form was used in the study. In order to prepare the semi-structured interview form, the existing literature on the subject and the interviews with the experts of the subject were used.

The semi-structured interview form consisted of 2 parts. In the first part, there were questions about the personal information of the interviewed participants. In the second part, there were questions to determine the students' thoughts about electronic books. The semi-structured interview form prepared by the researchers and used for the research is in Appendix-1.

2.4. Data collection process

An interview approach, in which open-ended questions are used to enable participants to describe their experiences, was adopted (Grbich, 2012). The interview questions that formed the basis of the in-depth interview process were asked to the participants of the research by creating a semi-structured interview form. The in-depth and unstructured interview process based on these questions was conducted face-to-face with each participant by the first author. The interview process was recorded with a voice recorder. After the personal comments of the participants were recorded by the second author, they were presented to them again to obtain the consent of each participant.

2.5. Data collection analysis

The thematic analysis approach was used in the analysis of the research data. Since the descriptive phenomenology approach was adopted in the research, it was found appropriate to use thematic analysis technique, which is an approach that serves this purpose.

Thematic analysis is the realization of the analysis process according to the similarities, differences and relationships in a data set. The word thematic is related to the purpose of searching for themes clustered in the data (Gibson & Brown, 2009). In other words, while a researcher is analyzing a phenomenon, he tries to determine the structures based on experience that make up the experience in the form of themes. Accordingly, the research data were given in the semi-structured interview

form and quotations from the participant's comments, in the findings section, by converting them into tables with frequency and percentage calculations.

3. Results

In this section, the answers of the participants to two closed-ended and four open-ended questions in the semi-structured interview form will be evaluated.

Table 1 shows the findings regarding the gender distribution of primary school 4th grade students participating in the research.

Table 1.

Gender distribution of primary school 4th grade students

Gender	F	%
Female	12	60
Male	8	40
Sum	20	100

In Table 1, the gender distribution of primary school 4th grade students participating in the research is given. Twelve (60%) of the students participating in the research are girls and 8 (40%) are boys. A total of 20 students participated in the research.

Table 2 presents the views of primary school 4th grade students on their e-book reading habits.

Table 2. *Opinions of primary school 4th grade students on e-book reading habits*

Themes	Participant Opinions	F	%
I regularly read e-books	S3; I read e-books every day because I think it will help my lessons. S7; I love reading books online and I read all the time. S11; I have a habit of reading e-books and I do this regularly.	7	35
Sometimes I read e-books	S1; I sometimes benefit from additional e-books to help my lessons. S14; Sometimes, but not always, I read stories as e-books. S20; Sometimes I read e-books as a supplementary resource for my school lessons.	11	55

		F	%
I rarely read e-books	S9; I rarely read e-books. I don't have such a regular habit. S16; I use e-books from time to time, but not very often. S18; I do not regularly use e-books. I just read a few storybooks a year.	2	10
Sum		20	100

In Table 2, e-book reading habits of primary school 4th grade students who voluntarily participated in the research were gathered in three categories. 35% of the students participating in the research stated that they regularly read e-books. While 55% of the students stated that they sometimes read e-books, 10% stated that they rarely read e-books. Based on this, it was concluded that the frequency of reading e-books by the students was medium.

Table 3 shows the opinions of primary school 4th grade students regarding their preferences for reading e-books and reading printed books.

Table 3 *E-book and printed book reading preferences of primary school 4th grade students*

Themes	Participant Opinions	F	%
I prefer both equally	S4; I am reading both. There are both printed and electronic books that interest me. S5; E-books and printed books are equally important to me. I prefer both. S13; I like to read both e-books and print books. S2; I also read e-books, but I prefer printed books.	9	45
I prefer printed books	S8; I prefer to read printed books. S19; I have electronic books, but I like to read printed books more. S2; I like to read e-books more.	6	30
I prefer e-books more.	S6; I love e-books more than print books and read more. S12; I think reading e-books is more fun. That's why I prefer it more.	5	25
Sum		20	100

In Table 3, the preferences of reading electronic books and printed books of primary school 4th grade students who voluntarily participated in the research are given. 45% of the students participating in the study stated that they prefer both equally. The rate of students who say they prefer to read more printed books is 30%. 25% of the students participating in the research stated that they prefer electronic books to printed books. From this point of view, it is possible to say that students mostly prefer both or electronic books in their preferences for electronic books and printed books.

Table 4 shows the opinions of primary school 4th grade students about the advantages of reading e-books.

Table 4.*Opinions of 4th grade primary school students on the advantages of reading electronic books*

Themes	Participant Opinions	F	%
Being easily accessible	S3; Elektronik kitaplara ulaşmak daha kolay. S6; Elektronik kitap satın almak çok kolay. S14; Elektronik kitap almak istediğimde hemen alabiliyorum.	7	35
Get more information	S7; Elektronik kitaplardan daha çok şey öğreniyorum. S12; Bence elektronik kitaplar daha çok bilgi veriyor. S20; Elektronik kitaplarda daha fazla bilgi bulabiliyorum.	7	35
Making learning easier	S14; Ben elektronik kitap okuduğumda daha kolay öğrendiğimi düşünüyorum. S15; Elektronik kitaplar benim daha iyi öğrenmemi sağlıyor. S18; Elektronik kitap okuduğumda daha iyi anlıyorum. Daha çok öğreniyorum.	6	30
Sum		20	100

Table 4 shows the opinions of the 4th grade primary school students who voluntarily participated in the research on the advantages of reading electronic books. 35% of the students who participated in the research stated that e-books are easily accessible. While 35% of the students participating in the research found e-books advantageous in terms of gaining more information, 30% of the students stated that facilitating learning was an advantage.

Table 5 shows the opinions of primary school 4th grade students about the disadvantages of reading electronic books.

Table 5.

Opinions of 4th grade primary school students on the disadvantages of reading electronic books

Themes	Participant Opinions	F	%
Easy disruption of concentration	S11; When I read e-books, I am immediately distracted. S13; Reading on the screen immediately distracts me. S17; I'm reading on a tablet and get bored quickly. S2; My eyes hurt when I read e-books.	12	60
Eye strain	S8; E-books tire my eyes when I read them for a long time. S20; Reading e-books sometimes hurts my eyes because of the screen light. S4; It makes me spend too much time on the internet.	5	25
Technology addiction	S7; Being on the computer all the time can increase computer addiction. S18; I use more computers to read e-books. This can increase addiction.	3	15
Sum		20	100

In Table 5, the views of primary school 4th grade students who voluntarily participated in the research on the disadvantages of reading electronic books are categorized. 60% of the students participating in the research stated that the easy deterioration of concentration is the disadvantage of reading electronic books. 24% of the students defined eye strain and 15% of them defined technology addiction as a disadvantage. The majority of the students stated that electronic books easily disrupt their concentration.

4. Discussions

The findings obtained from the research reveal that primary school 4th grade students have a positive attitude towards e-book reading. Ab Rahim and Bakar (2014) aimed to determine the students' ability to use e-books, their level of understanding of e-book use, and their purposes for e-book use. In their study, they stated that, contrary to the findings of this study, students have a good grasp of using e-books, but the frequency of reading e-books in general is quite low. Similarly, Wilson and Landoni (2001) revealed that students' awareness of electronic books is quite low. It is possible

to attribute the reason why the results of this research show a different result from the studies conducted in the field, due to technological developments, the increase in the number of electronic books and the increasing prevalence of electronic book reading among students. Shamir et al. 2008) stated that reading e-books can improve children's reading comprehension and enjoyment, but such materials should offer more.

When the e-book and printed book reading preferences of primary school 4th grade students are evaluated, the research findings reveal that students' e-book and printed book reading tendencies and e-book reading tendencies are higher than their printed book reading tendencies. According to Larson's (2010) research, electronic book motivates students to read more than paper books and increases their interaction with texts. However, paper books are weak in motivating students to read.In the research, the opinions of primary school 4th grade students about the advantages of reading electronic books were evaluated. It has been determined that being easily accessible, getting more information and facilitating learning are the advantages of reading electronic books. Duran and Ertuğrul (2012) revealed in their research that e-books facilitate the transition to bagless education and prevent waste of books.

It is seen that the opinions of primary school 4th grade students about the disadvantages of reading electronic books are gathered in three categories. These are ; easy impairment of concentration, eyestrain and technology addiction. According to the results of Hamer and McGrath's (2010) studies, students can focus on the text on the screen more easily than the text on the paper, but they can remember more than the text on the paper. In addition, the majority of students stated that reading printed books is more advantageous than reading electronic books. Shamir and Korat (2007) discussed the design features of electronic books in their research. Text reading with natural print lighting, link activations compatible with the text, a game mode separate from the text mode and the option of words that can be repeated by the child are determined as the innovative technologies compatible design features of electronic books. In the study, it was emphasized that electronic books designed with these features can be an important factor in preventing distraction during reading. In addition, De Jong and Bus (2002) argued in their research that the design of texts in electronic books with innovative technologies has an important effect on the development of students' vocabulary. Wood (2005) also revealed in his study that electronic books designed through innovative technologies will contribute to the development of students' vocabulary, and that the activation that students will initiate on their own will affect their vocabulary skills.

5. Conclusion

How effective e-book reading can be in developing reading habits among children, young people and adults is an important issue that needs to be investigated both in Kazakhstan and all over the world. One of the most effective methods that can be applied to improve the vocabulary of primary school 4th grade students through innovative technologies is to enable them to read electronic books. Based on this, in this study, students' e-book reading attitudes were evaluated. As a result of the research, it was determined that primary school 4th grade students' e-book reading habits were positive. When the students' preferences for electronic books and printed books were asked, it was determined that the students' preferences for electronic books were at least as much as printed books. While e-books are easily accessible, obtaining more information and facilitating learning functions are recorded as advantages, easy deterioration of concentration, eyestrain and technology dependency are defined as disadvantages.

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6. Recommendations

The results of the research were evaluated and the following suggestions were developed;Informing students about the use of e-books will be effective in promoting the use of e-books among students. In order to reduce or eliminate the concentration-disrupting and eye-tiring effect of electronic books,studies should be carried out to make electronic books suitable for health through innovative technologies.Teachers' knowledge, skills and competencies should be tested and they should be encouraged to encourage students, as electronic books accelerate the adaptation process of students to the age of technology-based education.

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Annex 1. Semi-Structured Interview Form Regarding the Electronic Book Reading Attitudes of Primary School 4th Grade Students

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Semi-Structured Interview Form

Part 1. Personal Information

Gender: Female (   )   Male (   )

Dear Students;
In line with the interviews with you, the answers you gave to the questions asked were meticulously evaluated and written down. It is of great importance for the reliability of the research that you check and confirm whether the answers given below belong to you. Thank you for your participation.

Part 2.

1. What are your views on your e-book reading habit?
………
………

2. What are your views on your preference for reading e-books and printed books?
………
………

3. What are your views on the advantages of reading e books?

………

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4. What are your views on the disadvantages of reading e-books?

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