

## The Early Literacy at Preschool Education: The Book or the E-Book?

**Elif YALÇINTAŞ SEZGİN, Ph.D.**

*Uludag University, Inegol Vocational School  
elifyalcintas@uludag.edu.tr*

**Asisstant Prof. Dr. Leyla ULUS**

*Istanbul Universtiy, Hasan Ali Yucel Education Faculty  
leylaulus@istanbul.edu.tr*

### ABSTRACT

Educational technology is commonly used. The use of technology at preschool education has an important role with a lot of effective methods so that children can learn. Preschool teachers use the technology to support children's development. Early literacy skills have gained more importance especially in the recent years. As a result, the use of technology has been necessary to develop early literacy skills. Based on dialog, interactive book reading is an important activity to give children the opportunity for them to develop their early literacy skills. It was found in the previous studies, that the literacy skills of the children; for whom reading books based on dialogue by teachers or families, were at a better level. In this study, the previous studies related to E-book interactive book reading are gathered and it aims to introduce based on dialogue E-book to families and teachers and makes some proposals to support the early literacy skills through based on dialogue E-book. Besides, by studying the related literature, developing early skills to reading E-book or reading book were compared and the results were argued.

**Keywords:** Techonolgy, Preschool Education, Early Litearcy, E-Book at Preschool Educations.

### INTRODUCTION

Early childhood period has a critical importance for the development of emergent literacy skills. Emergent literacy skills have a significant impact on the child's literacy performance in primary school years as well as overall academic success. Thus, emergent literacy should be adopted by preschool teachers, and should be included frequently in in-class activities. In addition to this, the families should be informed about this topic and encouraged to demonstrate and support their children's emergent literacy activities at home. Also, studies that will increase attention, interest, and motivation should not be ignored. Emergent literacy practices appropriate to children's age and developmental attention levels should be included in the program (Yalçintaş-Sezgin & Ulus, 2017).

One of the most important contributions to educational research in recent years is the link between reading studies with early childhood education. Until 25 years ago, reading and writing education was not accepted or even should not be accepted. However, studies on emergent literacy emphasize the importance of early years, especially preschool period, for the development of future literacy fundamentals. Although there is a widespread understanding of the importance of early reading learning experiences in children, contradictory opinions exist about reading studies in preschool period. The lack of understanding of the concept of early reading is one of the reasons for these contradictory views. Technically, literacy means reading and writing correctly. But emergent literacy, reading and writing skills, is a continuing process until the beginning of the basic education that begins to develop from the moment the child is born. Moreover, skills that are assumed to be developmental determinants or pioneer of reading and writing is also defined as knowledge and behavior (Yalçintaş-Sezgin & Ulus, 2017).

### THE DEVELOPMENT OF COMPUTER TECHNOLOGY AND THE USE OF E-BOOKS

In the preschool period it is important that the adult and the child has reading and writing activities together which supports significantly the early literacy skills of the child and it should be thought that reading book is one of the most important activities (Sénéchal & LeFevre, 2002). However most of the children nowadays are exposed intensely to digital social media by variousof technological tools (Hisrich & Blanchard, 2009). As a result of exposure of technology the children have a lot of opportunities to observe and explore it and play with it. The children are most commonly exposed to electronic books which are E-books (Ihmeideh, 2014). With the help of E-book, the fun story reading activity with adults are able to be done individually. Studies show that this is a considerable activity for the early literacy of young children to evolve/develop. In the following parts this is explained in detail.

Computer technology is promising to support the early literacy skills of children in a creative and innovative way not only for normal-developing children, but also for the children with learning impairment risks. Before computer

technology the first early literacy skills develop during experience of reading done by adult and the child together (Bus, van Ijzendoorn, & Pellegrini, 1995).

### **WHAT IS E-BOOK?**

E-book is a text that is transformed from words, pictures and shapes that are in computer file format to digital form (Rao, 2003, p. 86). What differs E-book from traditional book are the sound/audio, (e.g. music or verbalism/expression/audio etc...) visuality (e.g. movement etc...) and etc. Besides in the E-book there are features that children can enjoy, like a motion picture with the text, shapes, audio expression (listening the story) and listening the text...

Another explanation is so; E-book is a form of interactive story(expression) that has multimedia effects for children between 3-8 years old and it is named as 'a living book, talking book or CD-ROM stories' and includes a written text, mouth reading, mouth talking, music, noise effects and motion pictures, shapes. This interactivity enables children to carefully follow the written text, sentence and paragraphs that is vocalized and so they understand the insider of the text. In this way they interact with the book, understand the words and the letters, enrich their vocabulary, improve their reading comprehension skills and increase their motivation to read (Segers & Verhoeven, 2002; Glasgow,1996-1997; Matthew, 1996; Reinking, 1997; Smith, 2001).

There is a new, thriving fashion in the recent years that to have the digital versions of books in the classes of young children (Unsworth, 2006). The International Reading Association (2009) emphasizes the importance of merging the technologies including digital books like E-book with current programs. Because when the literature is examined it is come through that the E-book supports and helps to improve reading and comprehension skills (De Jong & Bus, 2004; Gong & Levy, 2009; Maynard & McKnight, 2001; Moody, 2010; Verhallen & Bus,2010; Zucker, Moody, & McKenna, 2009). At the same time E-book is used effectively for the children with reading difficulties and for the children who are at the initial phase of reading (Zucker et al., 2009). According to Moody (2010) digital reading materials increase children to be included in the stories apart from supporting early literacy and Moody also suggests that this is quite important in the early childhood.

Because of many unique features, E-books provide a lot of opportunities. For instance; pictures, motion shapes and figures and pictures help children to understand the definitions and concepts of words. The letters in alphabet stressed and pointed out and this supports phonological awareness (Doty, Popplewell, & Byers, 2001; Moody, 2010; Wood, Pillinger, & Jackson, 2010).

### **READING AN E-BOOK OR A TRADITIONAL BOOK?**

When the literature is examined there are a lot of researches about reading an E-book or a traditional book. First of all it would be beneficial to point out the differences between an E-book and a printed out book. The difference is; E-book includes motion pictures, verbalism/expression and different audio. Mentionedadvanced features of E-book result in high reading and writing improvement and less success differences (Ihmeideh, 2014). Printed books are important for the improvement of children's reading and writing skills, however they lack some of the features E-book has.

Both in school and at home reading and writing skills are assisted/supported extensively with technological tools. Likewise, a well designed E-book comparing to traditional books help children better to improve their phonological decoding skills, vocabulary and to understand the meaning of words (Verhallen, Bus, &de Jong, 2006; Segers, Verhoeven, 2003). Increasing the utilization of E-books more than traditional books help children to experience a qualitative privilege of reading.

Today young children read the written-printed books with the adults, at the same time they can read the E-books individually without the help of adults. E-books are becoming more and more common. While reading an E-book, motivation and enjoyment of kids are higher at reading and listening (Greenlee-Moore & Smith, 1996).

E-books have a lot of advantages for children. When children read or listen E-books, they get to choose the story they like, they can listen the story and they can interactively join the story events (Takacs, Swart, Bus, 2015). E-books include motion pictures, wireless access area, sounds and activities. They also include written texts that change their color itself following the oral story for children to follow up easier (De Jong & Bus, 2002).

E-books provide children a personalized reading support. Children can read individually and they can take up on themselves the learning (Matthew, 1996). E-books have the potential to encourage and support children with features that traditional books do not have (Huffstetter, King, Onwuegbuzie, Schneider & Powell-Smith, 2010; Bus, Takacs & Kegel, 2014). Having the pictures and the content with motion make the E-books more fun. Unlike in traditional books children can set the speed of reading themselves. However, a disadvantage of E-books for children is that without having a skilled reader with them, they will have difficulties to understand unfamiliar words (McKenna, 1998). In

literature it is showed that having an adult with child during reading is beneficial. Yet children aren't exposed to books that help to improve their early literacy skills. However, family child dialogue is equally important (Mol, Bus, de Jong & Smeets, 2008). During reading a book the participation of adults is encouraged. For instance; with specific questions about the story and with the explanation, language development is supported (Mol, Bus, de Jong & Smeets, 2008). However, a good designed E-book has a feature; the child can click on the unknown/unfamiliar word and listen it over and over. If the E-book has the dictionary feature, child can click on it and learn the meaning of the word. In this way a disadvantage of E-book can be eliminated. E-book can be used individually by the kids and also with the company of adults.

E-books can also be helpful to children who are unwilling and unresponsive to read (Maynard, 2010; Maynard & McKnight, 2001).

Reading stories are thought to be an important activity to support early literacy of children (Bus, Van IJzendoorn, & Pellegrini, 1995). However, even if there is an extensive evidence on the positive relationship between reading a book and the speaking language of children, there is only a few evidence about the positive relationship between reading a story and the early writing skills. (Bus et al., 1995; Sénéchal, 2006; Korat, Klein, & Drori-Segal, 2007).

A lot of researches on adult-child book reading claim that this activity to support children's speaking language has contribution (De Temple & Snow, 2003). Just a few researches state that these activities has contribution on early literacy skills (e.g. naming the letter, reading a word, writing a word ...) (De Temple & Snow, 1996; Leseman & de Jong, 1998). These three meta-analysis work show that reading a book activity contributes 8% children to speak and write (Bus, van IJzendoorn, & Pellegrini, 1995; Mol, Bus, de Jong, & Smeets, 2008; Scarborough & Dobrich, 1994). One of the comments about this topic is that neither the families nor the teachers generally stress out the writing (Dickinson & Tabors, 1991). For that reason, children can not focus on the writing, while they are looking at the book (Evans & Saint-Aubin, 2005). Researches show that the families and the teachers talk rarely about the writings during the reading activities (Muter, Hulme, Snowling, & Taylor, 1997; Piasta, Justice, McGinty, & Kaderavek, 2012). Whereas in E-book, in various screen parts there are embedded tools. These tools are planned to provide extra information about characters. E-books also have some features that are optional like repeating the text, copying a sound, changing the screen or enabling to enter a game and some other activities to help you to understand the story. By clicking on the shining word in the text, you receive the explanation of the word. The created dynamic images apart from the written text help to pass forward the inside of the story in a detailed way and children understand easily what story tells (Korat, 2010).

Person who tells the story can help children to understand the writings by stressing out the written words, sentences and paragraphs. For example; children can click on the unknown/unfamiliar word and listen it again. These E-books not only help children to learn new words, but also to help them to read the words (Korat, 2010).

In the research they did, Korat and Drori stated that preschool children who are up to 4 years old are subjected to E-books and the result was beneficial. When these children were subjected to pre-test, they recognize the word and their phonologic awareness were lower than 5-6 years old preschool children. However, with the help of developed E-book they showed the same development in reading and writing with 5-6 years old children.

A good developed E-book has strong potential for young children to improve their reading and writing skills and they can start with E-books from the age of 4 years old (Korat & Drori, 2016).

A research about the efficiency and the worth of E-books to improve reading and writing, for instance, for preschool children and for children who just start school show that for children to recognize the words with the help of E-books is promising (Miller, Blackstock, & Miller, 1994; De Jong & Bus, 2002; Lewin, 2000). It is also found that the E-books support the improvement of phonological awareness of children (Chera & Wood, 2003; Wise Olson, Annsett, Andrews, et al. 1989). Cheer and Wood, carried out the reading activity with E-book for 4 weeks with preschool children who are 3-6 years old and found out that their phonological awareness were more improved than the children from the control group. Besides, their verbal skills got better after using electronic story book (Lewin, 2000; Segers & Verhoven, 2002). E-books in headstart kindergartens show that reading and writing skills of children were improved (Talley, 1994).

Korat (2010) studied in a research the language and reading/writing skills of Israeli children after reading electronic story books. The E-book research were applied to preschool children. To compare the first grade children were taken in the research. In every ages children were randomly separated to two groups; 5 times E-book read intervention group and a control group that goes school regularly. The evaluation of reading the word is done as pretest and final test. In final test they evaluate if the children can understand and explain the story. Children who read E-book showed a promising improvement in understanding and reading the word comparing to control group. Preschool children in same

way showed better improvement in reading more words than first grade intervention group. Apart from that, preschool children showed a good improvement in understanding the story (Koran & Shamir, 2007) concluded similar results. E-book was found as an effective tool to understand the story.

The families should be educated about the usage of E-book and its different mechanism to have a successful interaction with their children. Peneu et al. (2009) found in the researches that, the families who support E-book usage claim that the phonologic awareness, recognition of letters, language, reading comprehension, and creating words and early literacy etc. such skills of their children are improved. Likewise, Shamir and Korat (2006) applied the study of story books in CD-ROOMS to children of low economic level and middle economic level families. In pre- and final-tests, comprehension & recognition of the word and phonologic awareness were tested. To conclude, both in low economic level and middle economic level children show improvement after this educational E-book application. Apart from that children of low economic level showed even better improvement than in middle economic level. E-book can overcome the learning barriers of low economic level children (Shamir&Korat, 2006). Even if the features of E-book result in less family interaction, they can minimize the success differences. E-books motivate the children to read. Because the E-book is multi-dimensioned featured and that is why it can help children who are behind their compeers/fellows overcome learning barriers (Shamir & Korat, 2006).

### CONCLUSION AND DISCUSSION

In this research/paper, reading an E-book and reading a book in the early ages of children is compared by examining the literature. It is concluded that children who read stories in E-books or children who read individually improve their reading and writing skills better than the children of other control groups. Especially, writing awareness, recognition of the word, reading the word and vocabulary showed improvements. (Shamir, & Korat,2007; Korat & Shamir, 2007; Verhallen, Bus, &de Jong, 2006; Segers, Verhoeven, 2003; Korat, 2010, Korat & Drori, 2016).

Apart from that the E-book supports the early literacy in young children, it also motivates children to read books, helps their concentration because they have to listen during the story read in a period of time and helps to understand the story. Children at these ages like to read books with the adults or listen however they also like to observe the book individually. E-book gives children the opportunity to be independent.

New developed features of E-books offer better qualities in motion, sound, brightness and vividness. All of these new improvements enable children to listen and watch the stories without getting bored. In most of the traditional books there aren't motion pictures and drawings. Young children like to look at motion pictures. That is why these features of E-book help children to spend more time with E-books. Improvement of early literacy skills in young children required motivation and interest and it is supported with E-books.

Digital tools (e.e computer disk) make it easier the use of E-books, however with the improvement of technology the touchscreen tablet apps (downloadable software programs designed for mobile devices e.g., literacy, gaming, and e-book apps; Neumann, 2014) are used by families, teachers and children. And young children can also use them individually (Thank, 2011). Bloodgoog (1999) states that some 3-4 years old children who have small muscle capabilities have the ability to write their names and alphabet. That is why touchscreen can be an alternative tool to children who are at the different stage of writing skills. Because in the stories children draw from up on the letters inside the words. This let the children to experience drawing. This important experience is not present.

To summarize the advantages of E-books; with E-books children learn the new words that are stressed out when the sound in E-book reads the story. There are games and pictures that help children to understand the story (Segal-Drori, Korat, & Klein, 2013; Shamir, Korat & Fellah, 2012). When compared to classical printed books, kids can spend more time with their families. People with growth retardation can also favor from E-books. (Moody, Justice& Cabell, 2010; Shamir, Korat & Fellah, 2012; Parish-Morris, Mahajan, Hirsh-Pasek, Michnick Golinkoff & Fuller Collins, 2013). The Children can read the E-book over and over. Reading the same story over and over increase their reading skills. Children by themselves can enjoy reading the E-book alone (Salmon, 2014). This can liberate children and gets children more keen on reading. E-books are useful and accessible (Salmon, 2014). Families and teachers can download to their computers, laptops and iPads. This easy access gets families choose the reading activity without distinction of place (e.g. metro, auto-bus etc.). Children learn better when they read with adults (Drori, Korat, & Klein, 2013; Moody, Justice& Cabell, 2010). That is why the adults are required to increase the reading activities with E-books rather than classical books.

E-book stories should have more advanced features and their numbers should be increased in every language and families at home, teachers at school should benefit from E-books to support children's early literacy skills. The children can do the reading activities with E-books alone as well as with their parents. Because young children may require the guidance of adults. Various and advanced features of E-books should be introduced to parents and E-book's frequency should be increased. Pre-school teachers should also benefit from the attractive and impressive features of E-books.

They can benefit from the E-books in such a way that the reading activity could be done with E-books so that it becomes more fun. Especially E-books can be made use of supporting the early literacy skills of children with special needs such as developmental retardation and difficulty in reading.

## REFERENCES

- Bloodgood, J. W. (1999). What's in a name? Children's name writing and literacy acquisition. *Reading Research Quarterly*, 34, 342e367.
- Bus, A. G., Takacs, Z. K., & Kegel, C. A. (2015). Affordances and limitations of electronic storybooks for young children's emergent literacy. *Developmental Review*, 35, 79-97.
- Bus, A. G., van IJendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, 65, 1–21.
- Cayley, R. (2016). eBooks and Print Books Can Have Different Affects on Literacy Comprehension. *Education Masters*. Paper 325.
- Chera, P., & Wood, C. (2003). Animated multimedia “talking books” can promote phonological awareness in children beginning to read. *Learning and Instruction*, 13, 33–52
- Cresskill, NJ: Hampton Leseman, P. P. M., & de Jong, P. F. (1998). Home literacy: Opportunity, instruction, cooperation and social-emotional quality predicting early reading achievement *Reading Research Quarterly*, 33, 294–318.
- De Jong, M. T., & Bus, A. G. (2002). Quality of book-reading matters for emergent readers: An experiment with the same book in a regular or electronic format. *Journal of Educational Psychology*, 94(1), 145.
- De Jong, M., & Bus, A. (2004). The efficacy of electronic books in fostering kindergarten children's emergent story understanding. *Reading Research Quarterly*, 39, 378e393.
- De Temple, J., & Snow, C. E. (2003). Learning words from books. *On reading books to children: Parents and teachers*, 16-36.
- Dickinson, D. K., & Tabors, O. (1991). *Beginning literacy with language*. Baltimore, MD: Brookes
- Doty, D., Popplewell, S., & Byers, G. (2001). Interactive CD-ROM storybooks and young readers' reading comprehension. *Journal of Research on Computing in Education*, 33(4), 374e382
- Evans, M. A., & Saint-Aubin, J. (2005). What children are looking at during shared storybook reading. *Psychological Science*, 16, 913–920
- Evans, M. A., Saint-Aubin, J., & Landry, N. (2009). Letter names and alphabet book reading by senior kindergarteners: An eye movement study. *Child Development*, 80, 1824–1841. doi:10.1111/j.1467-8624.2009.01370.x
- Evans, M. A., Williamson, K., & Pursooa, T. (2008). Preschoolers' attention to print during shared book reading. *Scientific Studies of Reading*, 12, 106–129
- Glasgow, J. (1996-1997). It's my turn! Part 2: Motivating young readers using CD-ROM, storybooks. *Learning and Leading with Technology*, 24, 18-22.
- Hisrich, K., & Blanchard, J. (2009). Digital media and emergent literacy. *Computers in the Schools*, 26(4), 240e255
- Horney, M., & Anderson-Inman, L. (1999). Supported texts in electronic reading environments. *Reading and Writing Quarterly*, 15, 127e168
- Huffstetter, M., King, J. R., Onwuegbuzie, A. J., Schneider, J. J., & Powell-Smith, K. A. (2010). Effects of a computer-based early reading program on the early reading and oral language skills of at-risk preschool children. *Journal of Education for Students Placed at Risk*, 15(4), 279-298.
- Ihmeideh, F. M. (2014). The effect of electronic books on enhancing emergent literacy skills of pre-school children. *Computers & Education*, 7940-48. doi:10.1016/j.compedu.2014.07.008
- International Reading Association. (2009). New literacies and 21st-century technologies: A position statement of the International Reading Association. *Newark, DE: Author*.
- Korat, O. (2010). Reading electronic books as a support for vocabulary, story comprehension and word reading in kindergarten and first grade. *Computers & Education* 55, 24–31.
- Korat, O., & Shamir, A. (2006). The educational electronic book as a tool for supporting children's emergent literacy in low versus middle SES groups. *Computers & Education*, 50(1), 110-124.
- Korat, O., Klein, P., & Drori-Segal, O. (2007). Maternal mediation in book reading, home literacy environment, and children's emergent literacy: A comparison between two social groups. *Reading and Writing: An International Journal*, 20, 361–398.
- Korat, O & Segal-Drori, O (2016). E-Book and Printed Book Reading in Different Contexts as Emergent Literacy Facilitator. *Early Education and Development*, 27:4, 532-550.
- Leseman, P. P., & Jong, P. F. (1998). Home literacy: Opportunity, instruction, cooperation and social-emotional quality predicting early reading achievement. *Reading Research Quarterly*, 33(3), 294-318.
- Lewin, C. (2000). Exploring the effects of talking book software in UK primary classrooms. *Journal of Research in Reading*, 23, 149–157.
- Mahwah, NJ: Erlbaum. De Temple, J. M., & Snow, C. (1996). Styles of parent-child book reading as related to mother's view of literacy and children's literacy outcomes. In J. Shimron (Ed.), *Literacy and education: Essays in memory of Dina Feitelson* (pp. 49–68).

- Mathew, K. I. (1996). The impact of CD-ROM storybooks on children's reading comprehension and reading attitude. *Journal of Educational Multimedia and Hypermedia*, 5, 379-394.
- Maynard, S., & McKnight, C. (2001). Children's comprehension of electronic books: on empirical study. *New Review of Children's Literature and Librarianship*, 7(1), 29e53.
- McKenna, M. C. (1998). Electronic texts and the transformation of beginning reading. *Handbook of literacy and technology: Transformations in a post-typographic world*, 1, 45-59.
- Miller, L., Blackstock, J., & Miller, R. (1994). An exploratory study into the use of CD-ROM storybooks. *Computer and Education*, 22, 187-204.
- Mol, S. E., Bus, A. G., de Jong, M. T., & Smeets, D. J. (2008). Added value of dialogic parent-child book readings: A meta-analysis. *Early Education and Development*, 19(1), 7-26.
- Moody, A. (2010). Using electronic books in the classroom to enhance emergent literacy skills in young children. *Journal of Literacy and Technology*, 11(4), 22e52.
- Moody, A. K., Justice, L. M. & Cabell, S. Q. (2010). Electronic versus traditional storybooks: Relative influence on preschool children's engagement and communication. *Journal of Early Childhood Literacy*, 10(3), 294-313.
- Muter, V., Hulme, C., Snowling, M., & Taylor, S. (1997). Segmentation, not rhyming, predicts early progress in learning to read. *Journal of Experimental Child Psychology*, 65, 370-396
- Neumann, M. M. (2014a). An examination of touch screen tablets and emergent literacy in Australian pre-school children. *Australian Journal of Education*, 58, 109e122.
- Parish-Morris, J., Mahajan, N., Hirsh-Pasek, K., Michnick Golinkoff, R. & Fuller Collins, M. (2013). Once upon a time: Parent-child dialogue and storybook reading in the electronic era. *Mind, Brain, and Education*, 7(3): 200-211
- Penuel, W. R., Pasnik, S., Bates, L., Townsend, E., Gallagher, L. P., Llorente, C., & SRI, I. (2009). Preschool Teachers Can Use a Media-Rich Curriculum to Prepare Low-Income Children for School Success: Results of a Randomized Controlled Trial. Summative Evaluation of the "Ready to Learn Initiative". *Education Development Center, Inc*
- Piasta, S. B., Justice, L. M., McGinty, A. S., & Kaderavek, J. N. (2012), Increasing young children's contact with print during shared reading: Longitudinal effects on literacy achievement.
- Rao, S. (2003). *Electronic books: a review and evaluation*. *Library Hi Tech*, 21(1), 85e93
- Reinking, D. (1997). Me and my hypertext: A multiple digression analysis of technology and literacy. *The Reading Teacher*, 50, 626-643.
- Salmon, L. (2014). Factors that affect emergent literacy development when engaging with electronic books. *Early Childhood Education Journal*, 42:85-92.
- Scarborough, H. S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review*, 14, 245-302.
- Segal-Drori, O., Korat, O. & Klein, P. S. (2013). What can better support low SES children's emergent reading? Reading e-books and printed books with and without adult mediation. In A. Shamir & O. Korat (Eds). *Technology as a support for literacy achievements for children at risk. Literacy Studies 7*, Dordrecht, NL: Springer.
- Segers, E. & Verhoeven, L. (2002) Multimedia support in early literacy learning. *Computers*
- Segers, E. & Verhoeven, L. (2002) Multimedia support in early literacy learning. *Computers*
- Segers, E. & Verhoeven, L. (2002) Multimedia support in early literacy learning. *Computers and Education*, 39, 207-221.
- Segers, E., & Verhoeven, L. (2003). Effects of vocabulary training by computer in kindergarten. *Journal of Computer Assisted Learning*, 19(4), 557-566.
- Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73, 445-460
- Shamir, A., Korat, O. & Fella, R. (2012). Promoting vocabulary, phonological awareness and concept about print among children at risk for learning disability: can e-books help? *Reading and Writing*, 25: 45-69.
- Shamir, A., & Korat, O. (2015). Educational electronic books for supporting emergent literacy of kindergarteners at-risk for reading difficulties-what do you we know so far. *Computers in the Schools*, 32, 105-121.
- Smith, C. R. (2001). Click and turn the page: An exploration of multiple storybook literacy. *Reading Research Quarterly*, 36, 152-183
- Takacs, Z. K., Swart, E. K., & Bus, A. G. (2015). Benefits and pitfalls of multimedia and interactive features in technology-enhanced storybooks: A meta-analysis. *Review of educational research*, 85(4), 698-739.
- Talley, S. (1994). The effect of CD-ROM computer storybook program on Head Start children's emergent literacy. *Master's Abstracts International*, 33(6), 1638.
- Unsworth, L. (2006). *E-literature for children: Enhancing digital literacy learning*. New York: Routledge
- Verhallen, M. J., Bus, A. G., & de Jong, M. T. (2006). The promise of multimedia stories for kindergarten children at risk. *Journal of educational psychology*, 98(2), 410.
- Verhallen, M., & Bus, A. (2010). Low-income immigrant pupils learning vocabulary through digital picture storybooks. *Journal of Educational Psychology*, 102, 54

- Wise, D., Olson, R., Annsett, M., Andrews, L., Terjak, M., Schneider, V., et al. (1989). Implementing a long term computerized remedial reading program with syntactic speech feedback: hardware, software and read world issues. *Behavior Research Method Instruction and Computers*, 21, 173–180.
- Wood, C., Pillinger, C., & Jackson, E. (2010). Understanding the impact of young readers' literacy interactions with talking books and during adult reading support. *Computers and Education*, 54(1), 190-198
- Zucker, T., Moody, A., & McKenna, M. (2009). The effects of electronic books on pre- kindergarten-to-grade 5 students' literacy and language outcomes: a research synthesis. *Journal of Educational Computing Research*, 40, 47-87.