

BAR-ILAN UNIVERSITY

**The effect of amount and type of interaction in
electronic books on listening comprehension and words
learning of pre-school children**

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Abstract .1

Reading books to preschool children is considered a most important activity that develops various literacy and verbal abilities. With the development of technology many children are exposed to electronic literature through a variety of digital means. E-books facilitate interventions of various kinds such as, games, content and dictionary while all of these are applied with and without a direct connection to the content of the story. The present study addressed the question of what is the type and amount of optimal intervention that will positively affect story comprehension and acquiring new words among compulsory kindergarten children. The study group was comprised of 72 children of compulsory kindergarten age with normal development, from medium to high socio-economic status and without gender difference. The experiment was conducted over three days with the first session devoted to knowing one another, and for distributing a preliminary test and a ADHD questionnaire to be completed by the kindergarten teacher, in order to determine the suitability of the participants for the study. In the additional two sessions, participants viewed three e-books with an intervention that matched the narrative content presented on the computer, but the amount of intervention was different among stories and the type of intervention was different among participants. The amount of intervention was manipulated by three levels, so that each child received one story with a low amount of intervention, including one intervention for every two slides; one story with a moderate amount of intervention, which included one intervention for each slide; and one story with a high amount of intervention, which included two interventions on most slides. The type of intervention was manipulated by two levels, so that half of the participants received an intervention of dictionary, which interprets difficult words in the story, and half of the participants received an intervention of elaboration that included implied information about the feelings, intentions and thoughts of the characters, which were not explicit in the text. Both types of intervention appeared in the same slides in

the three amount in each of the stories. At the end of each e-book reading, each participant answered orally questions of comprehension and a vocabulary test.

The findings of the study showed that the higher the amount of intervention when viewing an e-book, both in the elaboration and dictionary type, the greater learning of new words takes place, and there is a greater improvement in listening comprehension. However, this effect was observed only in the second session, after the children were exposed a second time to the stories. In the first session, learning new words was indeed observed, but to the same extent in all amounts of intervention. However, the additional exposure to the stories significantly increased the number of new words learned and the listening comprehension when the amount of intervention was high. These findings suggest that both types of intervention, elaboration and dictionary, have a similar positive effect both on acquiring new vocabulary and on listening comprehension among compulsory kindergarten children. It appears that pauses or interruptions while viewing e-books, in order to expand the plot by different emotional and/or social expressions or in order to explain difficult words, do not interfere with the course of the story, and do not impair the various learning processes, at least not at the amount of intervention examined in this study. Likewise, one-time exposure to e-books is not sufficient for the amount of intervention in these books to have an effect. Rather, at least additional re-exposure of this intervention is necessary. It is important to note that although learning new words was observed at the first session, we cannot attribute this with certainty to the intervention itself, because in this study we did not address the effect of listening the stories on children's performance without any intervention at all.

These findings have important implications for the methods of learning and teaching of educators and parents alike. Moreover, our research may contribute to the development of e-books and their optimal adaptation to the population. Alongside this, in follow-up studies it is recommended to conduct a longitudinal study that allows for re-examination during several

months and even a study that compares wider age ranges. This is to examine the learning process of the different ages and to adjust the teaching methods for them and the quality of the e-books. Furthermore, in future studies it is recommended to expand the population of the study to include, for example, children from low socioeconomic status, language impairments, ADHD and more, in order to understand their needs in depth and provide an appropriate response regarding the adaptation of books to a variety of societal groups. Similarly, our research can be repeated through printed books such that the interventions will be made by adult mediation and also, reach additional and more diverse populations, for example those who cannot afford to purchase books of the type in the study.