

BOOKS OUT - DIGITAL BOOKS IN

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Abstract: A recent trend has introduced digital books in schools in Israel and abroad. Digital books are received with enthusiasm and great hopes but also some concerns. What is the digital book? Is it simply the conversion of a printed text to text that appears on the screen? What are the reasons for the use of digital books? What benefits and disadvantages arise in the use of digital books in schools? How can digital books be used for maximum benefit in the classroom? What is the significance of using digital books in teacher-training? These and other questions will be addressed during the presentation of a study conducted among teachers who teach mathematics with the assistance of the "Ksharim and Heksarim" [Skills and Contexts] program for Israeli elementary schools.

Keywords: Digital books, 21st century skills, technological tools, learning program.

1. INTRODUCTION

Digital books (e-books, electronic books, dynamic-books, digital books and talking books) are books produced in digital form including information presented in various media, readable through various technologies. Although it is often just an electronic duplicate of a printed book, in other cases it is a purely digital version. Why use a digital book? The trend in the education field is to encourage use of digital books as an innovative and varied learning environment that allows the planning and organization of learning in a different manner than the environment offered by a printed book. A digital book is a tool that can be used to teach 21st century skills and to foster independent learning with intelligent use of technological means suited to the learner's needs [1]. In addition to the traditional teaching of the different disciplines (Mathematics, English, Sciences etc.) studied in school, learning is also conducted through digital books providing challenging and significant learning in a digital environment that runs in parallel to the use of printed books.

Advantages inherent in the use of digital books include the presentation of information in a variety of media readable through different technologies. Although the digital book is often the electronic version of a printed book, in other cases it is a purely digital version. This technology serves to produce meaningful learning, broadening the learning contents in the book with contributions by the teacher and the student, representing information in a variety of media: text, pictures, film, applications etc. [2].

A digital book serves as an interactive environment, allowing for feedback and evaluation to be given and received [3]. Educational information is constantly available at any time and through any end receiver. The characteristics of the digital book therefore permit significant learning, while there is also the possibility of continuous updating of information and learning activities provided by those who developed the book, and a wide-spread environment is provided that allows

interdisciplinary learning, with both online and off-line learning, and access to learning contents that can be adapted for diverse students. The digital book is characterized as technology in the service of significant learning, offering advanced learning processes of investigation and critical thinking; a learning experience that is relevant and meaningful for the learner's life, permitting planning of dynamic and flexible learning, a system for the management of teaching and learning, supervision and evaluation, and offering possibilities for collaboration through a range of technological tools. It helps the learner to develop digital skills and literacy. Pedagogic advantages of the digital book include a reduction of the weight of the school students' satchel so that less damaging to health, it also costs less than a hard copy book. Thus too the online teacher can work with mobile computers/labs as the end tool for a group of students. Digital books can be integrated in the learning program of a particular discipline and become an integral part of the teaching, learning and evaluation processes [4].

However, Eshet-Alkalai and Gheri [5] review studies on readability and show that reading digital presentations is significantly slower than reading from printed formats. Online reading on Internet creates a larger cognitive burden on the reader in comparison to reading a printed text so that readers remember printed text better than text read from a digital format.

The present study investigated digital book reading habits when printed books were also used in parallel to the digital books, consideration is given to the teacher's years of teaching experience, the frequency of use of digital books, whether digital books assist teaching in the classroom and whether the teachers are satisfied with this learning program.

2. METHODOLOGY

Participants were 291 teachers teaching mathematics in elementary schools in Israel with the assistance of digital

books. The teachers responded to a questionnaire administered to them through Google.docs during the second semester of the 2015-2016 academic year. Their responses to the questionnaire were analyzed with SPSS analytical software program.

3. FINDINGS

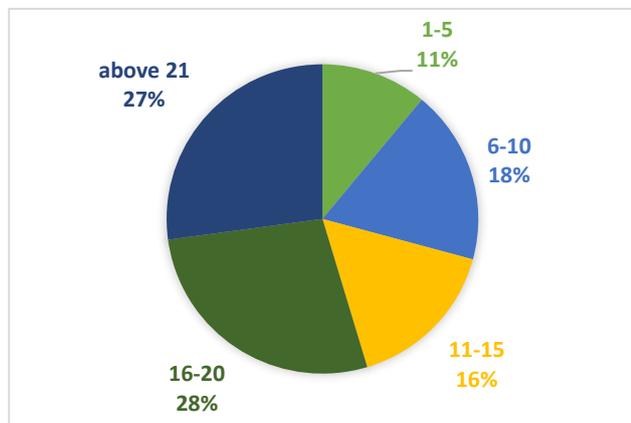


Image 1: Teachers using digital books, by years of teaching experience

65% of the teachers who teach with digital books are veteran teachers with more than 16. years' experience in teaching.

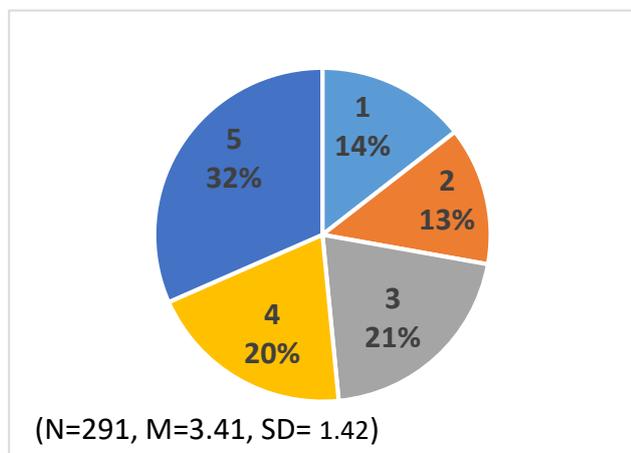


Image 2: Frequency of use of digital books, by number of occasions per week

52% of the participants used digital books in their teaching more than once a week.

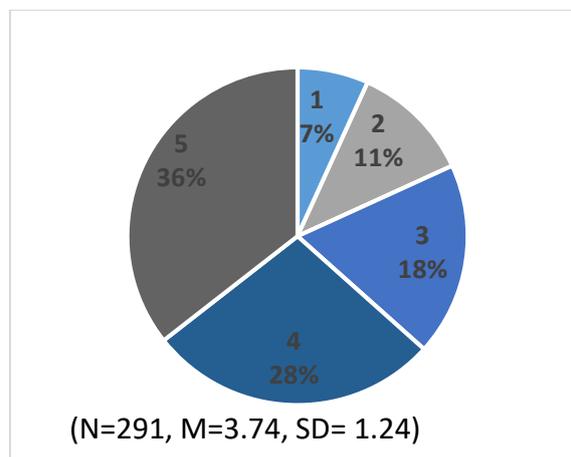


Image 3: Does the use of digital books assist teaching in class?
64% answered yes-definitely yes

Table 1: Questionnaire statements which received high mean grades (among all participants)

Questionnaire statement	Number of respondents	Mean	SD
I am satisfied with the <i>Skills and Contexts</i> program	291	4.07	0.92
I think that the <i>Skills and Contexts</i> program develops mathematical thinking	291	4.05	0.89
Does the use of digital books assist teaching in class?	291	3.74	1.24

There were differences between teachers from different types of settlement in degree of satisfaction regarding the use of digital books: Teachers were categorized by the size of the settlement in which they lived: towns (N=57); medium sized settlements (N=39) and small settlements (N=75). Kruskal-Wallis a-parametric tests for independent samples were run to test difference between these three groups. Significant differences were found between the three groups for “extent of satisfaction from the program” and “use of digital books helps teaching in class”.

A significant statistical difference was found between the groups in the extent of satisfaction from the use of digital books:

$$X^2(2) = 6.66, P < 0.05$$

The highest mean satisfaction was found in medium sized settlements (M=4.39, SD=0.75). Mean satisfaction rates

were slightly lower for small settlements than for medium sized settlements ($M=4$, $SD=0.98$) and the lowest satisfaction rates were in towns ($M=3.97$, $SD=0.84$).

5. CONCLUSION

Analysis of the data and the questionnaire indicated that there the teachers were satisfied with the use of digital books and it also transpires that insofar as the digital books are used in classrooms in elementary school then there is more teacher satisfaction from the use of these books.

The analysis also indicated that in large towns there is greater satisfaction and satisfaction also increased respectively when the teacher was more experienced. This may be explained due to the desire of the veteran teachers (more than 16 years teaching experience) to revitalize their teaching while on the other hand the new teachers have not been trained for this work or fear the introduction of the technological facet into their teaching in the classroom and so they use digital books less.

In general it seems that the trend to teaching with digital books is in advanced stages and that the world of traditional books is rapidly undergoing change and may even perhaps gradually disappear in coming years. The advantages of digital books were explained above and also emerged from the literature. The use of digital books mediated by the adult reading the electronic book provides a unique contribution to the improvement of buds of students' literacy beyond the mediation provided when reading a printed book and beyond the support of a digital book

alone. The use of innovative software such as electronic books together with suitable mediation by an adult should promote pupils' reading abilities and their achievements in the field of written and spoken language.

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