Perception of Electronic Textbooks by Pupils of Lower Secondary School: Results of a Questionnaire Study

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Introduction

The presented investigation aims to build on pupils' needs in respect to the learning materials they prefer to use at school and at home. More concretely, the research attention is paid to textbooks – traditional printed and electronic textbooks (e-textbooks).
Since there is a huge expansion of ICT use in education, the question of the future of printed textbooks is essential:
Does the printed textbook still possess an important place in learning and instruction?

Defining e-textbook

- The term e-textbook (electronic textbook) is in this poster considered subordinated to the term e-book (electronic book).
- In a broader context, *e-book* can be defined as a text converted to an electronic (McKnight & Dearnley, 2003), alternatively a digital form (Reitz, 2004). It is possible to read it on the PC, tablets, smart phones or a similar device
- It is an electronic equivalent of a *printed book* (Gay, 2007). In comparison with the printed book, the e-book consists of some in use features (search functions, hypertext links etc.) which are specific only for an electronic environment (Vassiliou & Rowley, 2008).
- More precisely in the school context, the e-book can be termed as *e-textbook*, which is *an instructional text in an electronic (digital) form* (Cutshall, Mollick, & Bland, 2009). It is superordinate to its other forms as a multimedia and interactive textbook.

Review of Literature

Studies concerning the acceptance of e-textbooks, especially in college students, few studies in lower secondary school pupils – contrastive findings:
- students considered e-textbooks more current and timely than their print counterparts (Bryant & Mims, 2012)
- students expressed little to no preference for e-books (Nelson, 2008)
- e-textbook widely accepted among lower secondary school pupils aged 11-12 years (Maynard & Cheyne, 2005)

METHODOLOGY

Research questions

What is the pupils' perception of e-textbooks?
Is there any difference between the perception of printed and e-textbooks?

Research tool

a questionnaire with 10 Likert type items with a 5-point scale (strongly agree – slightly agree – nor agree/nor disagree – slightly disagree – strongly disagree).

Categories of items:
1. demographic and context focused items (gender, age, grade) 4 pcs
2. items focused on the general view on printed textbooks and e-textbooks 4 pcs
3. items focused on different features of e-books (sound, image etc.) 2 pcs
4. pupils' preferences for printed textbooks/e-textbooks, 13 pcs
5. open-ended items on advantages and disadvantages of printed and e-textbooks 5 pcs

The reliability verified by the Cronbach's alpha coefficient: α=0,81
The validity proved by the Factor analysis

Research sample

285 pupils from 8 lower secondary schools in the Czech Republic
- 24% using e-textbooks and printed textbooks, 76% using only printed textbooks (across different subjects)
- aged 12 to 16 years (7th-9th grade)
- 51% girls, 49% boys

Method of data processing

- descriptive statistics (mean, SD)
- t-test for investigating the statistical difference of views of the following groups:
  Group 1: views of pupils using printed textbooks on printed textbooks
  Group 2: views of pupils using e-textbooks on printed textbooks
  Group 3: views of pupils using printed textbooks on e-textbooks
  Group 4: views of pupils using e-textbooks on e-textbooks
- additional qualitative analysis of open-ended items

Advantages of e-textbooks according to pupils

Pupil (7th grade):
We can watch educational video. We can enlarge the image or text. I do not have a heavy bag.

Pupil (8th grade):
It's clearer, more fun and I'm more interested in the subject. No need to buy textbooks.

RESULTS

Disadvantages of e-textbooks according to pupils

Pupil (8th grade):
Not paying attention. Instead of studying, I open my facebook page on a tablet.

Pupil (9th grade):
It is necessary to be online (have Internet access). Sometimes a technical problem.

Comparing the views of pupils on printed and e-textbooks (fig. 1)

Pupils using only printed textbooks have similar views on printed and e-textbooks as pupils using e-textbooks
- no significant difference between group 1 and group 2 (t = 1,44; p = 0,15), no significant difference between group 3 and group 4 (t = 0,97; p = 0,33)

Pupils using only printed textbooks have different views on printed and e-textbooks
- a significant difference between group 1 and group 3 (t = 11,43; p<0,001)

Pupils using e-textbooks have different views on printed and e-textbooks.
- a significat difference between group 2 and group 4 (t = 6,55; p<0,001)

Pupils' preferences to e-textbooks

- 52% would like to use the e-textbook at school, 25% would rather use it
- 75% like videos, audios and animations on e-textbooks
- 61% find the e-textbook more entertaining than the printed textbook
- 65 % pupils think that e-textbooks offers much more information than printed textbook

Advantages & disadvantages of e-textbooks in the pupils' point of view

- Advantages prevail
- Mostly from the entertainment and technical (material) point of view (see the quotations in speech balloons)
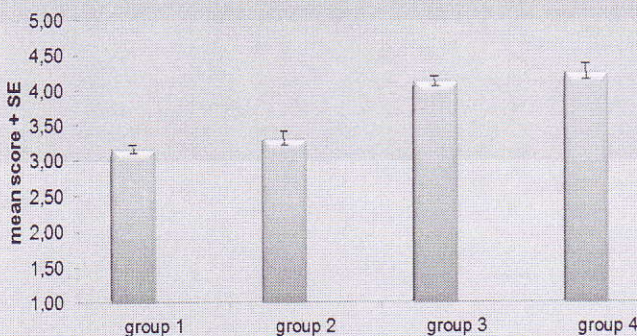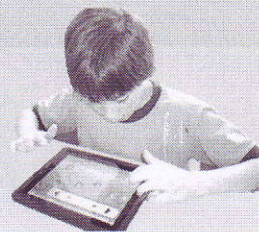
Conclusion

- More positive perception of the e-textbook both by pupils who use them and who don't
- Pupils' own views on e-textbooks t a rather superficial level

Figure 1: Comparing the views of pupils on printed and e-textbooks

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