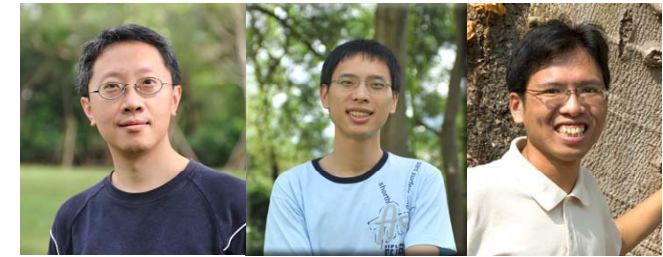


Usability and usefulness of eBooks on PPCs: How students' opinions vary over time

Paul Lam, Shun Leung Lam, John Lam & Carmel McNaught

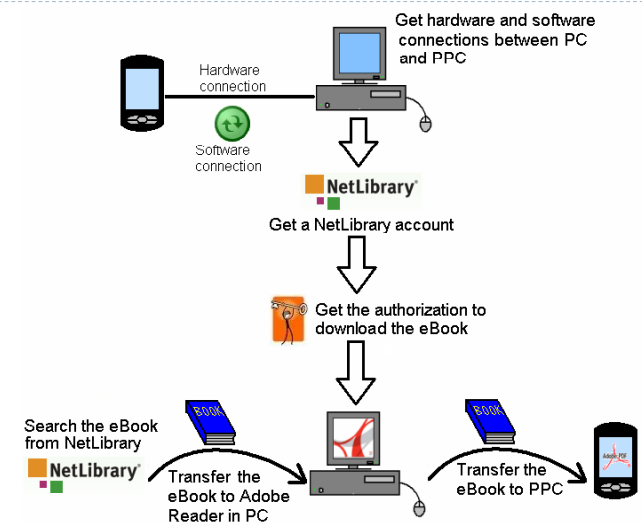
Australasian Journal of Educational Technology 25(1), 30–44.
<http://www.ascilite.org.au/ajet/ajet25/lam.pdf>
Best paper award at ASCILITE 2008



Previous research studies

- ▶ There are contradictory views on the use of mobile devices for reading eBooks
 - ▶ Positive:
 - ✓ High portability
 - ✓ Remote access
 - ✓ Faster to publish
 - ▶ Negative:
 - ✗ Navigation controls on eBook readers are difficult or time-consuming to use
 - ✗ Small screen
- ▶ These uncertainties led us to carry out this in-depth investigation in the local Hong Kong context.

Using NetLibrary and PPC



Research questions

- ▶ **Usability:**
 - ▶ Are eBooks easy to setup?
 - ▶ Are the functions easy to learn?
 - ▶ Are the functions easy to use?
- ▶ **Usefulness:**
 - ▶ Do students **enjoy** the reading process?
 - ▶ Are students able to **understand** the digital text?
 - ▶ Do students **use** eBooks?

▶ 5

Method

- ▶ **Our study was conducted in two phrases**
 - ▶ Phase 1 focused on students' first impressions of eBooks
 - ▶ Phase 2 was reading in a more naturalistic setting and over an extended period

▶ 6

Phase 1

- ▶ Six students were invited to participate in a number of sessions:
 - ▶ introduction to the technology (**pre-reading**),
 - ▶ guided hands-on training with the hardware and software and a guided reading session (**function-learning and reading**)
 - ▶ home reading for a week or two (**home reading**)

▶ 7

Phase 2

- ▶ **Another six students were invited for the study.**
 - ▶ **Function learning**
 - ▶ **Extended reading**
 - ▶ spread over 4 months
 - ▶ of academic books in their discipline
 - ▶ 4 hours per week
 - ▶ at least 200 pages

▶ 8

Data collection instruments

	Phase 1	Phase 2
<input type="checkbox"/> Researchers' observation records	Y	Y
<input type="checkbox"/> Video-recording	Y	
<input type="checkbox"/> Surveys	Y	Y
<input type="checkbox"/> Comprehension	Y	
<input type="checkbox"/> Weblogs		Y
<input type="checkbox"/> Email/phone consultation		Y
<input type="checkbox"/> Face-to-face interviews		Y

▶ 9

Mapping data and research questions

Main evaluation questions	Useable?		
	1. <i>Easy to set up</i>	2. <i>Easy to learn with</i>	3. <i>Easy to use</i>
Phase 1 pre-reading	✓		
Phase 1 function-learning and reading		✓	✓
Phase 2 function-learning	✓	✓	
Phase 2 extended reading			✓

Main evaluation questions	Useful?		
	4. <i>Enjoy</i>	5. <i>Understand</i>	6. <i>Willing to use</i>
Phase 1 function-learning and reading	✓	✓	✓
Phase 1 home reading	✓	✓	✓
Phase 2 extended reading	✓	✓	✓

▶ 10

Findings – easy to set up?

- ▶ **The eBooks expired after 24 hours**
 - ▶ The students felt annoyed due to the poor stability of PPC and the power system which could lead to the close of the Adobe Reader
- ▶ **Failure to download the eBook**
 - ▶ Two students had problems using home computers to download any eBook.

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- ▶ **Difficult to find a suitable eBook from the NetLibrary**
 - ▶ “I was just so frustrated that I could not find any of the reference books listed in the course outline of the courses that I have taken.”
 - ▶ “In my opinion, the books I found in CU library’s web site was more suitable and useful. Those I found using net-library were just too advanced.”

▶ 12

Findings – functions easy to learn?

- ▶ **No significant problems** were found in students' learning of the use of the PPC and NetLibrary. They learnt it fast.
- ▶ Two of the students were particularly positive about the ease of use of PPC and NetLibrary.

Findings – easy to use?

Operation	Number of students needing help during training		Number of ongoing challenges	
	phase 1	phase 2	phase 1	phase 2
Problem concerning changing the display format	7	5	5	
Problem concerning navigation	6		4	
Don't know how to add toolbar button	4		2	
Problem concerning searching	2	4	2	2
Problem concerning basic operations of PPC		8		
Totals	19	17	13	2

- ▶ Students in phase 1 seemed to have more problems in using the functions than those in phase 2.
- ▶ The difference actually also suggests that many of these functions can be effectively self-learnt, given enough time, and so students in phase 2 did not need to resort to the researchers for help.

Findings – enjoy reading?

Concepts measured	Phase 1		Phase 2	
	Mean	SD	Mean	SD
Overall easiness of the eBook software functions	4.8	0.3	3.3	0.8
Enjoyment of the eBook reading process.	4.0	0	2.7	0.5
Comfort in reading on the PPC screen	4.3	0.6	3.4	0.8
Assistance of eBook Reader features on reading	4.0	0	3	0.7
Assistance of eBook Reader features on understanding	4.0	0	3.2	0.7
Learnability of eBooks	3.9	0.2	2.7	1.0
Future use of eBooks	4.0	0	2.8	1.2

- ▶ There were also **complaints** received in the phase 2 weblogs and interviews about using PPC features in the weblogs/ interviews. For example:
 - ▶ “I do not like the small screen of the PPC because long sentences were cut into many short lines. I did not get used to move to the next line very often”
 - ▶ “The time required for charging was too long, I think it is better to be charged up within two hours.”
 - ▶ The ppc turned off suddenly and it did not turn on again when i pressed the on button ... I was just so frustrated and angry!!!”

▶ 17

- ▶ It seems that the more experience the students had with eBooks, the less they found the technology enjoyable and comfortable to use.



▶ 18

Findings – able to understand?

- ▶ Students' performance on the comprehension exercises and their related comments after they had done some reading in both the function-learning and reading sessions, and the home-reading sessions in phase 1: the mean percentage score on the comprehension exercise for the six students reading on a PPC was **47.7 (SD 14.3)** and for the four students reading a paper book was **63.9 (SD 17.7)**.

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19

- ▶ In phase 2, the students were asked to rate in the end-of-reading questionnaire whether they understand the content from reading text on a PPC versus reading text on paper. The mean score for reading on a PPC was **2.7** and for reading a paper book was **3.8**.

▶ 20

- ▶ The students noted that they were not familiar with reading eBooks and **concentrated less** when reading eBooks.
- ▶ More time was spent processing the eBook content. A number of students said that they **read eBooks more slowly** than they read paper books.

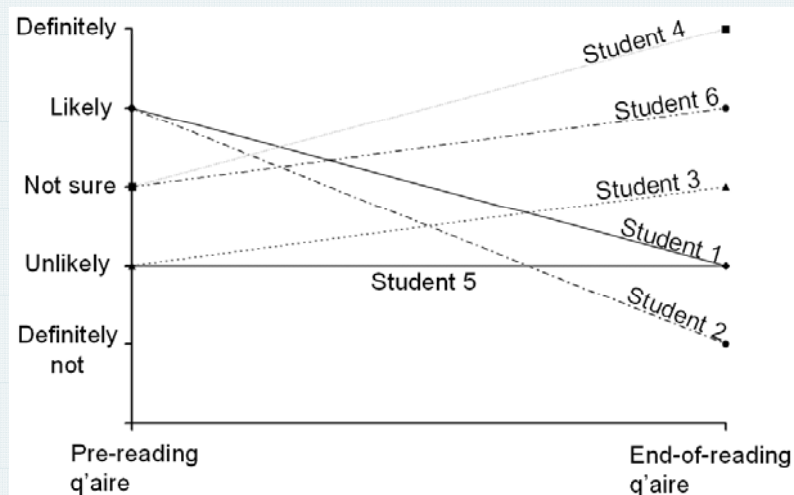
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Findings – use?

- ▶ **The students did not form a habit of using eBooks.**
 - ▶ Students aimed to do the minimum amount of reading on the PPCs as required.
 - ▶ They did not read other non-required books.

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- ▶ There were ups and downs in students' perception of whether they would use eBooks in the pre-reading questionnaire and the end-of-reading questionnaire



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- ▶ However, that cannot be regarded as an indicator that students will use the eBooks without the present motivation of the research project (where they were paid as student helpers).

▶ 24

Conclusions

Care is needed in our interpretation of the data particularly in relation to the small number of students who were involved in the study.



- ▶ Many challenges seem to hinder the practicality of eBooks in an authentic situation. They include:
 - ▶ Short loan period
 - ▶ Complicated procedure to download the eBook
 - ▶ The PPC and Adobe Reader did not always function properly
 - ▶ The small PPC screen
 - ▶ Issues with the power supply
 - ▶ Reading comprehension

