Readability of Scanned Books in Digital Libraries

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Another day a strong wind blew through the sky.
The sky was gray, and the blue clouds hurried in all directions.
Suddenly a rabbit appeared. The wind brought a blue clock to the rabbit
so it could tell the time. It looked familiar to the girl. It reminded her of
the book Alice in Wonderland. Her mother read the book to her.
Yes, that was the rabbit.
Challenge: proportions

The day was gray, and the blue clouds hurried in all directions. Suddenly a rabbit appeared. The wind brought a blue clock to the rabbit. It looked familiar to the girl. It reminded her of a book Alice in Wonderland. Her mother read the book to her. That was the rabbit.
Together, 800x600 and 1024x768 account for 55% of ICDL visitors.

Data based on data pulled in March 2008 using Google Analytics.
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- 800x600 (mono)
- 1200x900 (color)
Demos

- If network connection working:
  - ClearText demo
  - PopoutText demo
  - Skip backup slides

- Else:
  - Proceed to backup slides
Everybody has heard the story about Cinderella. It is a story about a little girl who lost her mother and father and was left with someone who was not able to love her as much as her parents.

Does anyone think about all the children who grow up without love and warmth? They are lonely and sad. They are misunderstood and rejected, and they search for love. They search for it in their dreams, in fairy-tales, among their toys, among birds, animals and flowers.

All around us sad children are growing into sad people all the time.

This is a story about such a girl.
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the book Alice in Wonderland. Her mother read the book to her.
Yes, that was the rabbit.
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The sky was gray, and the blue clouds hurried in all directions.
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so it could tell the time. It looked familiar to the rabbit. It reminded her of
the book Alice in Wonderland. Her mother read the book to her.
Yes, that was the rabbit.
And then, just when she remembered the turtle to whom she and her mother had fed lettuce, a turtle appeared in the sky. Its long leg protruded under the shell where it sheltered. There was no one else in the sky but soft clouds, and it could walk freely. The girl asked where it went. The turtle was not scared because the girl seemed tender and somehow lonely.

“I am looking for the lady who used to feed me a long time ago. She always fed me well. I have heard that she lives somewhere among the clouds. I am looking for her,” the turtle said.
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“I am looking for the lady who used to feed me a long time ago. She always fed me well. I have heard that she lives somewhere among the clouds. I am looking for her,” the turtle said.
The next day a blue bird came. It was strange. It looked as if it were made of clouds. And just when the girl asked herself what connection it could have with her mother, the bird said:

“I am a heavenly bird. A long time ago when I lived on Earth I hurt my wing. I could not fly. A woman took me tenderly, and fed me and took a good care of me until I was healed. There was a little girl with her. I have heard from some birds that the woman became a heavenly creature, just like me. I have been looking for her for days. I would like to thank her,” the blue bird said.

“That is my mother. Where could I find her?” asked the girl. But the bird was not there. It had disappeared in the clouds.
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“That is my mother. Where could I find her?” asked the girl. But the bird was not there. It had disappeared in the clouds.
Study

Experiment
- Read ½ book with...
  - Physical book
  - Standard
  - ClearText
  - PopoutText
- Same author
- Similar style
- 27 adults

Evaluate
- Rate (after each)
  - Easy to see
  - Can read quickly
  - Easy to manipulate
  - Keeps author’s intent
  - Attractive
- Rank (at end)
  - same
Surprises

- 61% preferred ≥1 of the new methods over the physical book for ≥1 measure
  - 37% for ease of manipulation
  - 33% for legibility
- Cited inherent limitations in books
  - Pages flop around
  - Inconvenient “zoom” capability
Subjective ratings

Error bars show 5% confidence intervals
All five measures had main effects with p ≤ 0.01 in RM-ANOVA
Practical Issues

- Rights
- Transcription
- Limitations of image processing
  - Slow
  - Requires some human correction
- Very difficult text examples
International Children’s Digital Library
www.childrenslibrary.org

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www.cs.umd.edu/hcil

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