

Improving Information Accessibility and Literacy in Australia

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ABSTRACT: Information Literacy is being strongly impacted by new technologies that are making information available in the format of choice of a reader, making the information easier to read, understand or remember for that particular reader. This new technology is making materials accessible to those who want to access information in non-standard formats –including many different eBook formats, large print (of any size and font), Braille, DAISY, dyslexia formats, Audio books, and the potential for personalized formats.

These changes will mean greatly increased information literacy for a wide range of people who previously had difficulty accessing the full range of information available in libraries. This includes people who are aging, people with visual impairments, people with learning difficulties & dyslexia, people who come from a non-English speaking background, as well as people who prefer to access information digitally.

These changes are being made possible by XML based work flows, multiple format generation software that can interact directly with users, local Print on Demand digital printing, and increasing digital book content. It is also made possible by the over twenty Australian publishers (including Random House, UQP, Fremantle, Hachette, and Simon & Schuster) who are currently working with and supporting this technology.

Libraries stand to benefit from this technology, which has been researched and developed in Australia, and is now coming into full commercial operation in the both United States and Australia. This paper discusses impacts of this technology for Australian libraries and how libraries can best use the technology to improve service to their users.

Introduction

Multi-format books have been pioneered by ReadHowYouWant (RHYW) (www.ReadHowYouWant.com). RHYW was started because the sister of the founder of RHYW has MS and was unable to track her eyes along long lines of small text. By reformatting the book into larger type, smaller lines, and increased leading or line space, his sister was able to read again. This broke our belief that it is the reader's responsibility to read the publisher's edition.

The Sobering Statistics

RHYW's best estimates of people who cannot, or do not want to read, a standard edition of a book are:

- Vision impairment: about 5% of the population have a significant vision impairment of some kind (different countries have different definitions of vision impairment so comparing statistics can be difficult) but this number is increasing as the population ages.
- Learning based language difficulties: 10-20% depending on severity and definition.
- The majority of prison inmates have reading issues, and the economic and social costs of this are huge. Reducing the number of people who have a negative self image of themselves created or exacerbated by reading difficulties would seem to be a very positive step.

- The significant aging population who can read proficiently but who find reading small print is too uncomfortable. Readers in this category are not excluded from reading in general but may be excluded from reading individual books. Try reading really small print for a while. The effort of working out what each individual word is can take so much physical effort that it is tiring, the meaning of the words can be lost, and it is no longer enjoyable.
- English as a second language. There are about 6,500m people in the world, and about 500m are native English speakers. There are at least 2000m people who would get double their wages if they have good English. People speaking a phonetic language (e.g. Spanish) have considerable difficulty with English. In Australia, possibly 1 in 3 migrants or 10% of the population could be affected.

In a country like Australia, Vision Australia estimate that over 20% of the population need alternate, accessible editions, and may increase beyond that as the baby-boomers develop age related reading issues. ***Clearly the single edition book is an outdated concept. We need to allow readers to choose a format that suits their reading style and capacity.***

Large Print is NOT One Format

There are many reasons for people to read large print. Many people find they can read large print more easily – they do not have to use as much effort trying to decipher small type. There is a lot of research to back up this proposition.

Some people have problems that require them to read large print. Some people may have retinal problems requiring denser type. People who can read 16 pt type comfortably, do not necessarily want to read 24 pt type. Other people may have lens or focus problems requiring larger type, but do not need denser type, and may find the denser type distracting. Some others may have eye tracking problems, just to name a few. People may have combinations of these problems.

Macular degeneration is a particularly difficult problem because readers lose their central vision – central vision is used to locate the beginning and end of a word and where the next word is. Enlarging the print will help people in the early stages of macular degeneration but larger print by itself will not solve the central vision eye tracking problem. Readers do not necessarily become “listeners”. New formats are required. One format under development scrolls words horizontally on a screen so that readers can see and read the flowing stream of words in their peripheral vision. A print format uses peripheral vision markers to help the reader eye track.

Formats have Evolved

In Roman times the words in a sentence were not separated by spaces and this made it hard to read

Spaces between words were introduced by Christian monks who also invented punctuation and paragraphs. Early printers made other changes to the **format of text** to make reading and understanding what you read easier. Consider the following new ways to format text:

The bus lurched along the switch-backed mountain road, throwing Keith against the window at every turn. They had left the village at 5:30 that morning after standing in the dark predawn chill for an hour and he was thoroughly exhausted. It was now midmorning, and the African sun was getting hot.

From "A Roadside Understanding" by Ben Hippen. Now, imagine that it was being read like this:

The bus

lurched along

the switch-backed mountain road,
throwing Keith against the window
at every turn.

They had left the village

at 5:30 that morning
after standing

in the dark predawn chill
for an hour

and he was thoroughly exhausted.

It was now midmorning,

and the African sun
was getting hot.

Additional Visual Information can usefully be added to text

The EasyRead Word Pattern Edition is **optimized** for **readers** who **need** help **differentiating** between **words** or tracking **their eyes across** a **line**. This **pattern** adds **extra** **visual information** about **word** order, **and** makes it **harder** for readers **to** swap **the** order **of** adjacent **words**.

The EasyRead Character Pattern

The **EasyRead Character Pattern Edition** makes it **difficult** to forget the **direction** of **reading**. The **ending** of each **word** stands out, and this **helps** people **who** forget to read the **last syllable** of the **word**. There is **extra** **visual information** about the order of **letters** within the **word**, and the **pattern** can also help with **word differentiation** and **eye tracking**.

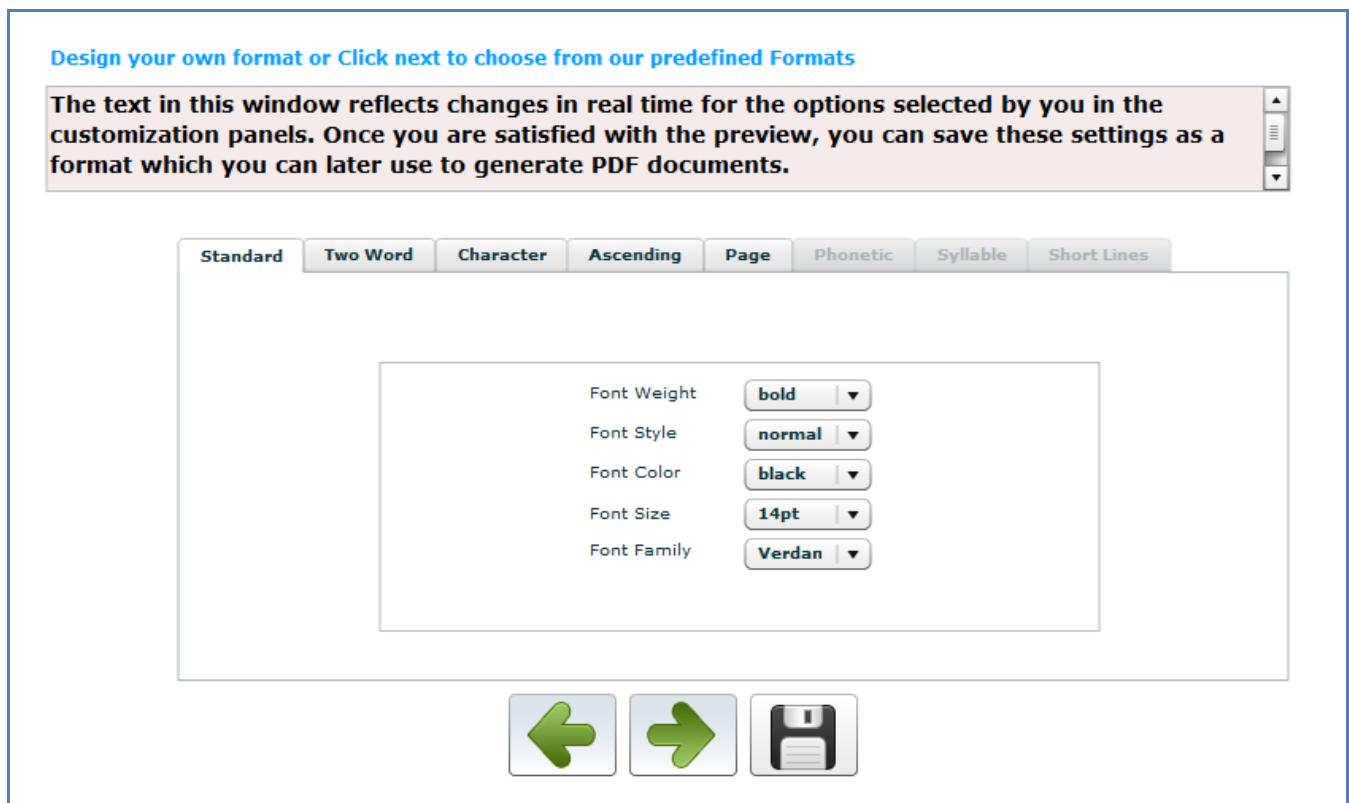
Phonetic Problems

Many men-nee people pee-pol find non phonetic words werds like through throo hard to pronounce.

Non phonetic words are one of the biggest impediments to literacy and one of the most difficult obstacles that non English speaking people face, especially where they speak phonetic languages, such as Italian and Spanish. The costs of this aspect of English to our society are very significant, and we believe the Holy Grail is to find a single format that can be read conveniently by both native English speakers and non native English speakers who have problems with non phonetic words – enabling libraries to buy one edition to suit a much larger percentage of the people who want to read that book.

Personalized Books

Different readers will select different formats as their optimal format. So ReadHowYouWant has designed a system where readers can choose a format, or create or change a format, and then order all their books in that format. Books can be printed on demand, or eBooks can be personalized. The screen shot below shows 5 templates from which the reader can choose.



The screenshot shows a web interface for customizing reading formats. At the top, there is a blue header with the text "Design your own format or Click next to choose from our predefined Formats". Below this is a light pink box containing the instruction: "The text in this window reflects changes in real time for the options selected by you in the customization panels. Once you are satisfied with the preview, you can save these settings as a format which you can later use to generate PDF documents." Below the instruction is a row of seven tabs: "Standard", "Two Word", "Character", "Ascending", "Page", "Phonetic", "Syllable", and "Short Lines". The "Ascending" tab is currently selected. Below the tabs is a large white box containing a preview area with the following settings: Font Weight (bold), Font Style (normal), Font Color (black), Font Size (14pt), and Font Family (Verdana). At the bottom of the interface are three buttons: a green left arrow, a green right arrow, and a floppy disk icon representing a save function.

The screen show below shows how a reader could choose the ascending character pattern and customize it for their reading styles.

Design your own format or Click next to choose from our predefined Formats

The text in this window reflects changes in real time for the options selected by you in the customization panels. Once you are satisfied with the preview, you can save these settings as a

Standard Two Word Character Ascending Page Phonetic Syllable Short Lines

Enable Ascending Pattern

Choose The Start and End Size of a Word

Min. Font Size 12pt

Max. Font Size 18pt

The screen shot below shows how the reader can specify the page layout of the book.

Design your own format or Click next to choose from our predefined Formats

The text in this window reflects changes in real time for the options selected by you in the customization panels. Once you are satisfied with the preview, you can save these settings as a format which you can later use to generate PDF documents.

Standard Two Word Character Ascending Page Phonetic Syllable Short Lines

Book Size

WxH = 7.75x10 in = 198.85x254 mm

WxH = 6x9 in = 152.4x228.6 mm




Line Spacing 1 pt

Word Spacing 1 pt

Character Spacing 1 pt

No. of Columns 1

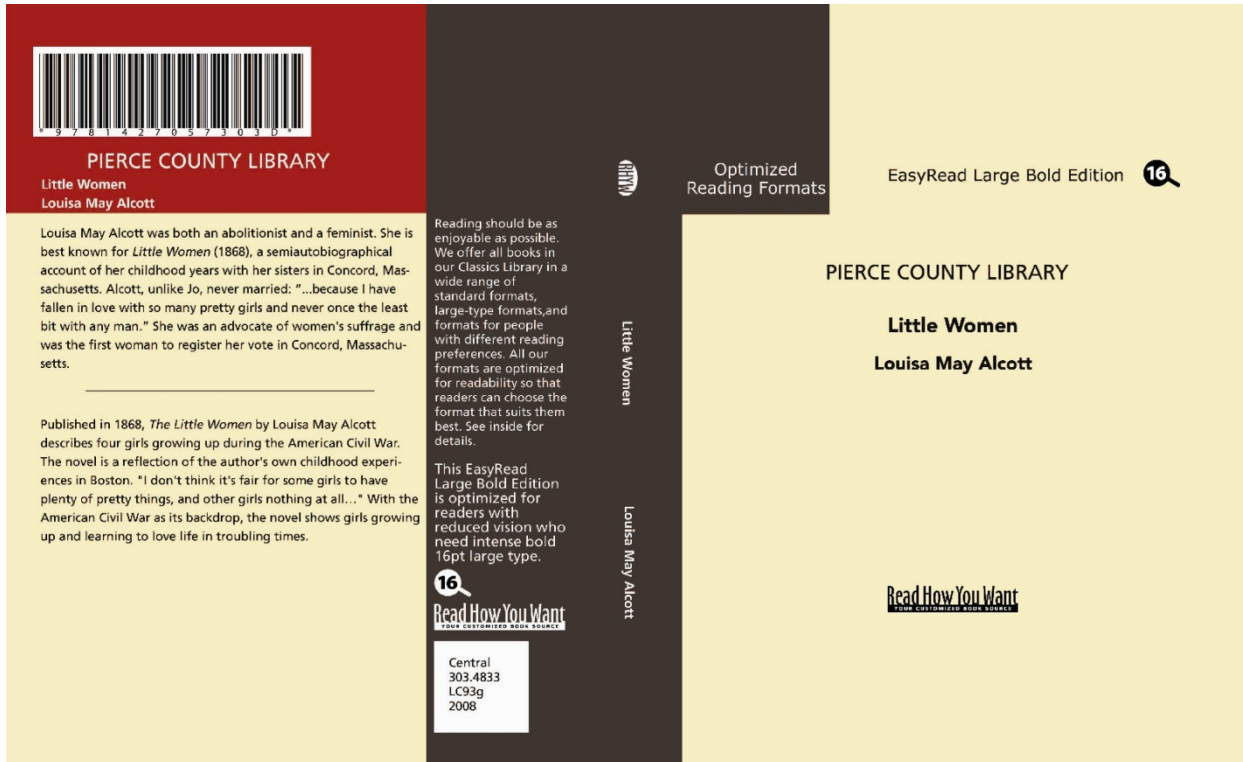
Gap of Columns .1 inch

Shelf Ready Library Books

The cover of a book can be changed using the RHYW Personalized Book system. This allows shelf ready library books to be individually printed for each library, reducing the distribution costs of library books. The following information is printed on the cover:

1. Library name
2. Catalogue number
3. Dewey number
4. And other relevant information



Library funding – the Library Donation Project

RHYW is launching a new project where

1. Librarians can select any RHYW titles and the formats they want the title in
2. A reader can purchase and donate one of these selected books to the library which selected it
3. The reader gets a donor's dedication printed in the front of the book, a tax deduction and the right to read the book first
4. The book is printed as a shelf ready book for the library and delivered to the library.

Libraries and the New Formats

If libraries want to help their readers, they will need to know what their readers want and need. And readers will need to understand their new format options. Someone will need to educate them.

If libraries don't want to help or cannot help readers with reading issues, will other organizations provide these services? Will library funding be diverted to these other organizations? If personalization is a trend, and more and more people start using personalized books, what will be the future of libraries that cater for just standard readers? Where will the new funding go?

Providing readers with information in their format of choice will require a number of obvious changes

- Title selection will become more complex as librarians will need to select both the title and the format of the title
- Library catalogues may need to be enhanced to allow search by format
- Library staff will need to be informed about and possibly trained to help readers select a format to suit themselves
- Libraries may need to purchase more than one edition of the title in different formats
- Libraries will need to actively cooperate with interlibrary loans, especially with physical books

What about eBooks?

Instead of buying standard eBooks licences, libraries might need to consider licences that will allow their readers to personalize an eBook. This would allow one reader to view a book in DAISY, and when the book is "returned", , and then in large type and then as a standard ePub file. Will libraries each do their own thing with their eBook collections? Will readers need to come into to libraries to get a book, or will it be available electronically. Will Libraries organize a more centralized approach where readers from a number of areas can download files from the one website, which is likely to provide greater choice of titles and formats?

Legal Obligations

What about the legal obligations to those with reading issues? Librarians may need to develop purchasing practices that comply with disability discrimination legislation, which will vary by jurisdiction. Should librarians specify a minimum type size, e.g. a 13 point type size that a larger percentage of their readers can read, without annoying people who can read small type? If 20% of the population cannot read a standard edition of a book, should libraries spend 20% of their purchases on new formats, or should they spend a greater amount as the current collection is not accessible?

New Roles and Revenue Streams for Libraries?

Can libraries licence eBooks that enable them to offer the book in different formats to different readers? Libraries often run reading courses. The Australian government pays for migrants to learn English. Can libraries source funds from activity? Can they use volunteers to teach reading or read to children? Can the children listening to the books be at home viewing the reader and listening via Skype? There seem to be a lot of ways libraries can serve the population and generate revenue at the same time.

Conclusions

In conclusion, as the population is aging, migration increases the population and the diversity of reading needs and disabilities are better understood, it make sense that information and books be provided in different formats to suit these various needs. For example, there is no reason why people should have to give up something they love because their eyesight changes.

Libraries, which are in the service of providing books and other information for the public, can begin to meet the special reading needs of its public by providing books in accessible formats that are easier to read for people who are struggling for whatever reason.

New funding arrangements such as the Library Donation Program may enable libraries to develop new sources of funding under library control while at the same time introduce new formats to its population of readers. Everybody could win.