



# ebooks:

A beginner's guide to ebook development for eLearning

by Scripture Union Queensland **2011**

*A Flexible Learning Framework Innovaions Project*

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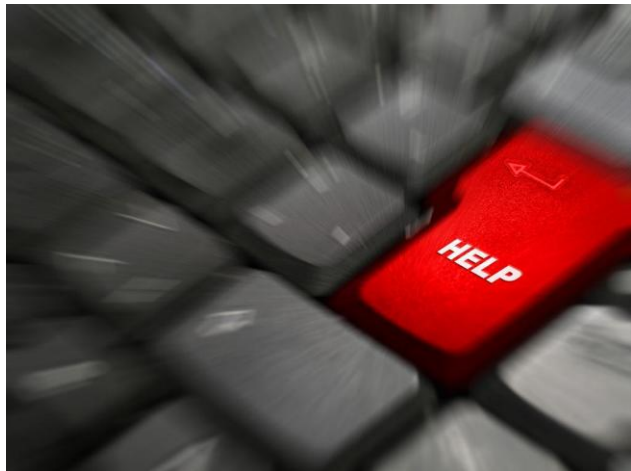
# Introduction

Electronic Books, or “ebooks”, for education, is more than just the digitization of text for learners, but a significant change in the way learners experience reading. The change is firstly in the storage, delivery and consumption of the text and secondly in the interactivity and dynamic nature of that text. One definition states that an ebook is;

*“...An electronic book, typically delivered over a computer network. E-book capabilities vary by vendor, but most offer hyperlink navigation and keyword searching within the text. Printing and downloading functions are usually available, but are restricted to protect copyrights.*

([library.hsc.unt.edu/researchtools/LibraryInformationTechnology...09/01/11](http://library.hsc.unt.edu/researchtools/LibraryInformationTechnology...09/01/11))

Although ebooks are different from paper books, they share much in common, and can be set apart from most web based text content. ebooks are different from websites as the content has in most cases gone through an editorial process that helps to establish and verify its information. The definition of what can be called a ‘book’ is being redefined through the simplification of the publishing process. Anybody can now take a body of text such as a blog or website, and [publish it as an ebook](#) through a web app and sell it on the worlds leading online publisher Amazon.



ebooks have long been predicted in science fiction. When Douglas Adams wrote the Hitchhikers Guide To the Galaxy, the hero of the story encounters an ebook that features the helpful words 'Don't Panic!' inscribed in 'large friendly letters' on the cover. This guide (not so famous) to ebook development for elearining, is also here to say ‘don’t panic’, and it’s time you begin to understand and embrace the exciting world of ebooks.

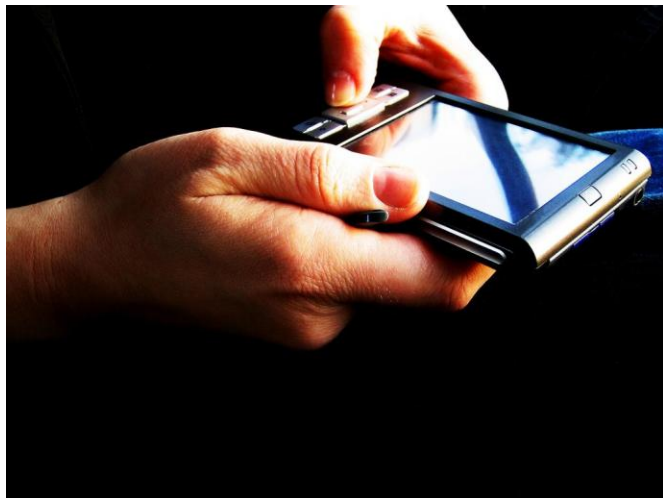
## The Future of Books

With the REDGroup collapse this year and subsequent closure of book stores around Australia (Angus & Robertson, Borders) there is much debate about the [future of bookstores](#), of books in their current format and even the [future of reading](#) as we know it. There are many economic factors at play with regards to the rise of the ebook over the paper book, ( the competitive and global reach of sales through online stores has for the first time lead to Amazon selling more ebooks than paper books in 2010 ), one factor can't be ignored and that is the popularity of electronic book formats through new ebook stores, ebook readers and ebook formats.

As noted in A Guide to Implementing Mobile Learning in your organisation 2010, the future of online content, and therefore e-learning content, will be increasingly mobile. ebooks and mobile devices go hand in hand, (excuse the pun), with learners who are engaging with elearning increasingly through mobile devices.

## ebooks & elearning

Learners are increasingly comfortable with ereading, for news, books and social connections through personal computers and mobile devices. The challenge for educators today is to not present learners today with older technology they are not used to, not comfortable with and will reject on the basis on unfamiliarity. ebooks bring together a body of information around a common topic. The ebook could be the solution to the problem that most elearning courses have, and that is too much disconnected content that confuse



learners who are left to navigate their own way through a busy cloud of pages, doc files and links. The ebook in elearning is as a Text Book to a course, with the advantages of portability, transferability , rich media and much more.

[The Horizon Report 2011](#), foresees ebooks as being one of the dominant educational technologies this year alongside mobile technology. The convenience of ebooks over textbooks is obvious for teachers and students but the investment required by institutions and content developers to transition to ebooks may not initially seem worth it. The content developer has to consider, as always, the text, the layout and style of the ebook but also the added development around the technical requirements of the ebook format. A low investment ebook with limited dynamic elements could be a word doc converted to PDF or HTML. Because ebook publishers are fairly liberal with what content they package as a 'book', the definition of 'book' is being redefined. As always, the role of educators will be to teach learners the critical literacy skills required to navigate through new forms of content including ebooks.

## **School Bags, Classrooms & Libraries**

ereading and tablet computers, (often the same thing), replace many existing technologies, devices and other physical objects required by students to complete a qualification. The difference an ebook can make to a students life includes 'lifting' the weight off their shoulders in terms of of text books in school bags, and frees up desk and home spaces already set aside for storing notepads, books and other electronic devices. How buildings, fashion and furniture will be shaped by the move to ebooks will be interesting and included in that is the way campus spaces and libraries are designed for student learning. Rows of desks facing a blackboard made sense when the it was assumed the blackboard and teacher contained the knowledge students needed to learn.

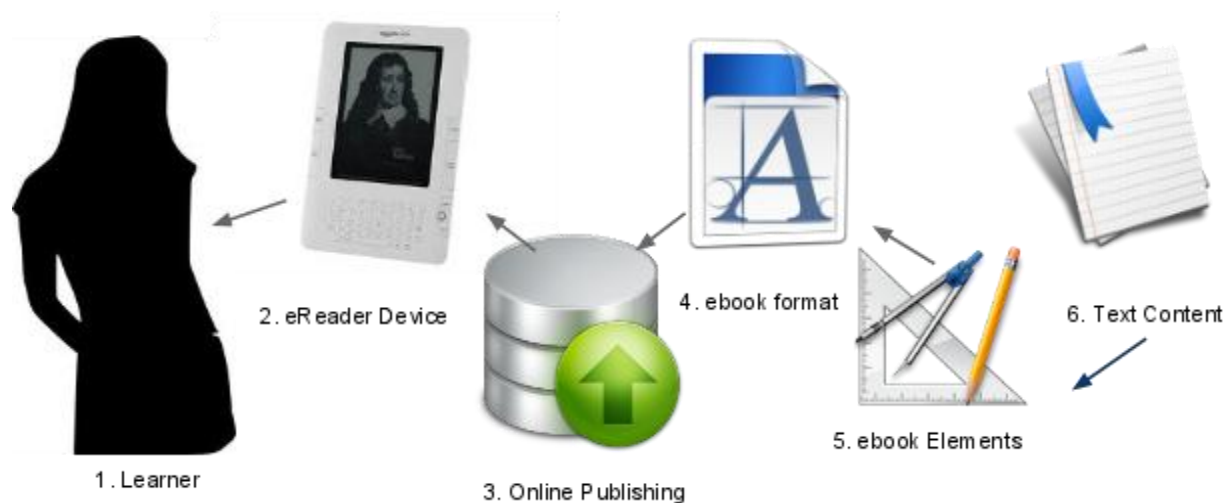
The role of the library and librarian has also been changing parallel to the change from paper based content to digital content. The emergence of online communications and resources have already transformed many campus libraries into technology friendly collaborative spaces, far from being a repository for endless rows of books. Librarians need to competent with managing online resources and play the role of ICT coach and trainer for students and teachers alike. The role of libraries and student learning spaces needs to be rethought in a world where ebooks are out selling paper based books. These spaces will be less for storing content but for gathering with peers around content.



## Developing an ebook

ebook development is not as difficult as many teachers may think. There are however some things to consider before embarking on writing your first best seller.

The development process and planning needs to start with the learner and work backwards to the content, considering the opportunities and limitations devices, delivery, formats and dynamic elements will bring to your content. Without considering who your learners are you might find your ebook has significant limitations in an educational setting.



1. Who are your **learners** and what are their preferred reading styles?
2. What eReading **devices** do your learners already use or have access to use?
3. How and where will you **publish** your ebook for learners to access?
4. What ebook **formats** are compatible with your Online publishing and eReading Devices?
5. What multimedia or **dynamic elements** to you want to include in with your text?
6. What **text based content** are you going to convert to an ebook ?

## How your learners read

The average learner is already exposed to reading in a variety of contexts from a variety of devices and in a variety of formats. You will need to consider the unique context and needs of your cohort of learners when designing the elements of an electronic book. It may be that due to access and ability and even attitudes your learners just aren't ready to be given learning content in the form of an ebook. For the sake of this guide, we will assume you are working with learners who are at some level already engaging with online content and ebook compatible devices.

The rise of online content has created experiences and with it expectations on how digital text should be presented and structured. Firstly your readers will expect to be able to navigate easily through the content via *Content Menus*, *Hyperlinks* and even *Search Tools*. The online readers experience is non-linear allowing for movement between sections and also out of sections to the broader content available on the World Wide Web. A common criticism of online content is that it's creating a generation of "shallow" readers with small chunks of content online never amounting to much in terms of depth of information or concepts. The ebook could see a return to deeper reading while gaining the new dynamics, interactivity and rich media of digital texts.

## ereaders and ebook formats

28 days after the launch of the iPad, Apple announced that customers had downloaded over 1.5 million e-books. Forrester Research predicts that e-book sales will surpass the \$1 billion mark in 2011 and Overdrive announced a 200 percent increase in e-book checkouts at virtual libraries in 2010. As with mobile phones and laptops, ereading devices come in many varieties. While the choice is a positive, the inconsistency of ereader file formats creates a dilemma for any developing hoping to cater for a wider audience.

Each ereading format is defined by the structure of the HTML, the behaviour and layout of elements and can be recognised by its unique file extension, eg. Kindle = .azw, fiction books= .fb2. Popular devices such as The Kindle and the iPad will view most ereading formats (see Appendix A for a full comparison of ebook formats). The challenge for the developer is to use formats that are most accessible for learners. ereaders and ebook formats are as varied as mobile phone browsers and the competition to be the leading format for educational use is still being played out. Currently the best way to produce ebooks that will work for all learners is to either enforce or invest in common devices for all learners, or to use the most compatible formats which can mean compromising on advanced functionality.

## dynamic elements

Developing an ebook as opposed to a paper book, opens up a huge range of multimedia and interactive elements that can be used to enhance the reading experience. Some ebooks, for example, will now come with soundtracks, podcasts, extra sections such as biographies or poetry by the author. Educators have for years sought to enhance content in Text Books by adding diagrams, notes pages, break out sections, complimentary web sites and even CD Roms attached to the front page to cater for multiple modes of learning. All of these elements and more can now be contained in an ebook with the text remaining the core element of content delivery.

Some of the elements that can added to an ebook include, In book Note Taking (sticky notes), Audio and Video content, Animation and moveable content eg Timelines Sliders, Menus and Content Pages, Bookmarking, Social Media syncing, Wireless Printing: (See Appendix B for a full list of elements.)





## ebook unique possibilities

**Social Networks:** Complete ebooks, or sections of ebooks and emagazines can now easily be shared with others in a readers social network simply by pressing a share button. This allows for readers to make recommendations to friends, write reviews and increase the connections to an ebook online. It may be a good strategy to create your own official social spaces that support and promote a community of readers around a text, for example, a dedicated facebook page or twitter hash tag, can be easily set up and linked from the ebook itself.

**Content Collaboration:** Digital texts built on cloud based services such as Google Docs, are able to be simultaneously written and or edited by multiple users allowing for rapid development of ebooks. Collaborative ebook projects can be used as e-assessment with students.

**Instant Publishing:** It's now possible for anybody with online access to publish a book. Can anybody write a best seller? No, but ebook hosting allows for teachers and learners to package texts and rapidly distribute them across a global market.

**eMagazines:** Shorter texts can be best delivered as an eMagazine, which replicates the experience of magazine reading (bite sized contents, visually driven articles) in an ebook format. There are now emerging eMagazine versions of many popular magazines available for download to ereading devices. Some learners may benefit from the casual layout of this format.

## ebook development - Best Practice

In order to reach a wide array of devices and deliver a workable solution for learners, there are a few practices that should be observed:

**Make Content:** While you need to consider your publisher options, file formats and dynamic elements from the outset, you need to actually put in the hard yards of writing a book before you can make it into an ebook. Plan for content development in your timelines.

**Use a bottom-up approach:** Design your application for the simplest of ereader enabled devices and use progressive enhancement to enrich the experience for more complex ebook formats.

**Focus on key tasks only:** Define goals about what you want to deliver to learners and what you need them to do in response. Too many features can make your ebook a complicated rather than an enjoyable reading experience.

## Hosting and Selling

ebooks can be shared through embedding the document in a browser reader or instantly downloaded from a link, but many ebooks are shared via hosting and publishing sites as free, sampler, or full price downloadable files. The host may take a commission, or hosting fee to cover the cost of publishing and marketing your ebook. Educators using ebooks as a way to package existing content in an LMS for example, would not need the services of a web publisher. Alternatively an educational program could be marketed through the publication of an ebook, even at no cost to the user, as the text could become the first experience someone has of the quality of content you provide.



## ebook mobile Apps

Most publishers have a mobile app to let you access their collection but also tap into their unique reading experience. The Kindle App for example lets people access eBooks on their iPhones without having to buy the Kindle device. The Kindle App is available for Blackberry, Nokia, iOS, and Android devices.

## Accessibility

Ebooks can be made accessible to site impaired readers through converting to accessible formats. EduApps has introduced **Create and Convert**, a free portable computer based multi-media resource to create and convert to accessible documents such as large print, audio, Digital Accessible Information System (DAISY) format and Braille.

This free software can be downloaded from the [EduApps website](#). Some educational contexts have legal consequences for not complying with access and equity laws and this also applies to ebooks .



# Technical considerations for ebooks

## designing for ebooks



Designing an ebook requires the skills of firstly the writer and editors of the content, but secondly the technical skills of format conversion, embedding media and adding code for interactive elements. Usually the author won't have all the skills necessary to make the most dynamic ebook on their own, but with a small amount of know-how, an ebook can be published by almost anybody with an internet connection.

For a step by step guide to making an ePub eBook, including how to add HTML 5 media, (compatible with most ereading devices), go to Appendix C) ***How to Make an ePub eBook Using Free Tools***, which can be found at the end of this document.

## format converters

When converting formats it's best to do a test run with any format application to see what the finished product will look like. Some elements may be lost in the process so keep back up versions of your original documents.

Converter	Features	Imports ←	Exports →	\$
<a href="#">eCub</a>	A lightweight ePub publisher to create iBooks available for Windows, Mac, Linux, FreeBSD and Solaris platform. Allows editing of the text or XHTML files with a simple internal editor or designated external editors; Create a simple cover design image, title, content and cover pages. eCub can be run from the command line as part of a build script.	TXT XHTML	ePub WAV MP3	F
<a href="#">Sigil</a>	Describes itself as a WYSIWYG ebook editor. Available for Windows, Mac and Linux.  WYSIWYG editing; Multiple Views: Book View, Code View and Split View; Metadata editor with full support for all possible metadata entries (more than 200) with full descriptions for each; Table Of Contents editor; Multi-level TOC support;	TXT HTML ePub	ePub SGF (native)	F

## Adding HTML 5 Video

HTML 5 has standardised support for native video control (with the new <video> tag) directly in the browser, with no need for a flash player plugin. ebook video content can be added to an ePub ebook in the following way.

STEPS:

1. Convert video to MP4 ...eg *testvideo.mp4*
2. Rename ePub file to .zip and unzip it
3. Find the xhtml main file
4. Make a folder there called video and copy the testvideo.mp4 file in there
5. now add **<video src="video/testvideo.mp4" controls="true" width="320" height="240" autoplay="false">This is an introductory video</video>**
6. now open the content.opd file and add **<item id="video1" href="video/testvideo.mp4" media-type="video/mpeg4" />**
7. Now zip the whole thing back up
8. Rename the file as .epub
9. Copy to iTunes and sync to device

## ebook Security

For an ebook to be protected from piracy it needs to be given a level of security in its final publishing format. You may need to guard your eBook against unauthorized access and illegal file sharing. Most of the ebook publishing sites will protect ebooks from file sharing in their own way but it can be done manually through sites like [www.electronicdeadbolt.com](http://www.electronicdeadbolt.com) and Virtual Vault. The Global Piracy Studies conducted by IDC for the Business Software Alliance found that 4 out of 10 copies of software and ebooks are pirated/stolen.

## Testing ebook formats and ereaders

There are 100's of ereading devices that learners could possibly be using to access learning content (and the number is growing). To test what your ebook or Learning Content might look and behave like on every ereading device would be impossible. There are a few strategies we have found to test your ebook, some without leaving your desktop browser.

Testing Methods	Strengths	Limitations
<b>Testing on real devices</b>	Test full touch, navigation, audio, button control and navigation experience.	Difficulty acquiring access to 100's of devices available and extremely expensive.
<b>ebook Emulators</b>	Free to use and can be tested through web browsers. There are also Mobile Device and OS Emulators.	Usually require the developer kit and some knowledge of development to use the emulators properly.
<b>Peer Editing</b>	Use the fresh eyes of colleagues to help find improvements in your copy or in your coding. The user experience is what matters in the end.	Too many editors can create doubts in what you should be confident about, and that is knowing your learners and your content.

# Case Study: the ebook experiment

## SUQld Diploma of Youth Work (YMIS)

YMIS Online hosts over 200 students and its online content services many more youth workers in the field who require ongoing support and training with limited time frames available to access online content. The online content already collected in folder libraries is often over cumbersome for our learners and a text book project has been discussed as a solution for a number of years.

Our 2011 Innovations project will be to research and develop a sample of ebook formats for a proposed ebook textbook for the Diploma of Youth Work online course. An ebook would allow us to continue to use our elearning platform for delivery and so create a dynamic and engaging text that can easily be edited and republished on an annual basis.

## Our Approach

Most of our RTO staff and learners now use mobile computing devices , and find them a good tool for self-directed learning, through blogs, podcasts and video media. Our first step in making an ebook will be to make a sample of our current material available in an ebook format.

We hope to move towards experimenting with other ereading technologies within our elearning platform with a pilot group of students. The results could be an exciting new way to engage learners at YMIS.

## Our elearning platform

We currently use Moodle 2.0 as an LMS which is populated currently with training videos, learner guides and readings as PDF documents, discussion boards and links to external content.

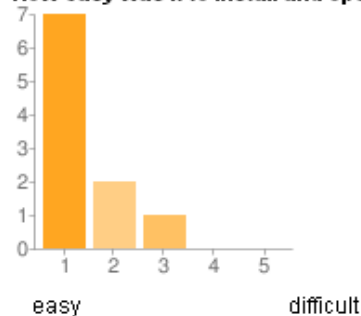


## Our Students and their Reading Habits

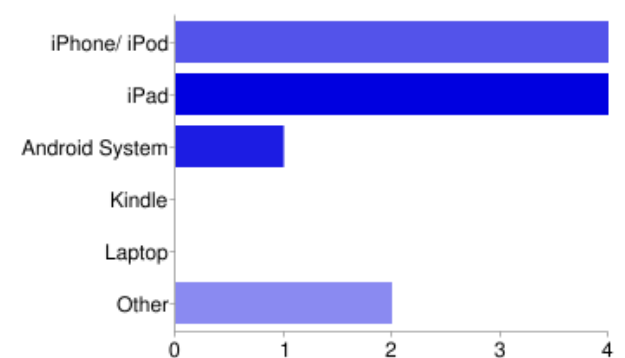
Recently our student were given a trial version of an ebook (Youth Work: Child Protection), and then a survey which asked the following questions,

1. *What devices have you used to access the ebook?*
2. *How easy was it to install and open the ebook we sent you?*
3. *Which of the following elements worked on your device? (Make a Bookmark, Make Notes, View Video, Hear Audio, Click Links)*
4. *Would you receive clusters as ebooks in the future?*
5. *What benefits do you see for using ebooks in YMIS?*
6. *What problems or hurdles do you see for using ebooks in YMIS?*

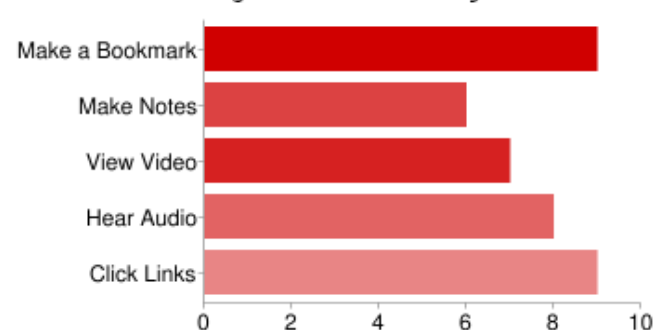
**How easy was it to install and open the ebook we sent you?**



**What devices have you used to access the ebook?**



**Which of the following elements worked on your device?**

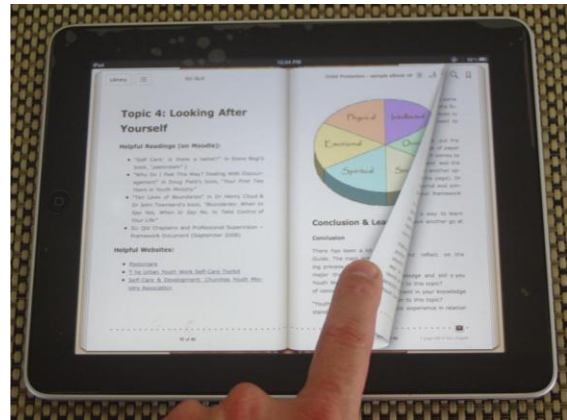


*Results from student ebook survey 2011.*



The survey also found that;

- Majority of our learners accessed our ebook from an iOS phone or tablet.
- All learners found it easy to install except download to desktop the page needed refreshing
- Functional Elements; Make a Bookmark, Make Notes, View Video, Hear Audio, Click Links
- 100% of our learners would like to receive an ebook like this as course work



#### Comments about benefits of ebooks;

*"Easy to read in the train or bus; very clear; compact; can easily go between the books"*

*"I haven't used e-books before, and I found it a great program I would personally like to explore some more"*

*"For me the biggest advantage is I can have the iPad open with the eBook open and be writing in the LMS or in Word to do my portfolio or tasks. I find it hard to go back and forth between 2 applications in the computer. Also I could work on the couch reading and then only sit at the desk to type. Also it saves trees :)"*

*"Easily portable. More than than using books. More interactive."*

*"On-the-go access from anywhere at any time. Searchable. Update-able."*

#### Potential Problems with ebooks;

*"Rather than seeing a lot of info on one page, it's spread over a few pages, which probably isn't a big deal, but if you were referring to something you had just read, you would need to flick between pages"*

*"I guess it requires having an expensive device ... but its pretty fool proof. "*

*"As long as people have the technology and that that can easily save any progress that they have made then that is great."*

*"Give me them all :) I guess if people don;t have phones it won't work."*

*"Technical issues mostly. For instance, there were blank spaces in the contents of my copy. I also noticed that the first time I put the link into mobile safari, it came up with a button to "Open in iBooks", but no matter how many times I clicked it, iBooks wouldn't open. I had to refresh the page to get it to work."*

## ebook Trial #1 - PDF

Our first attempt at converting a word doc was straight forward, we converted to PDF using [CutePDF](#) and the result was actually pretty good. When we opened the PDF on the iPad there was an option to open it in iBooks which worked.

The problem is that PDF is a page based layout which means you cannot re-render the pages for various screen sizes and types. Many of our students are accessing the reading material on a mobile phone and you can't read it well.

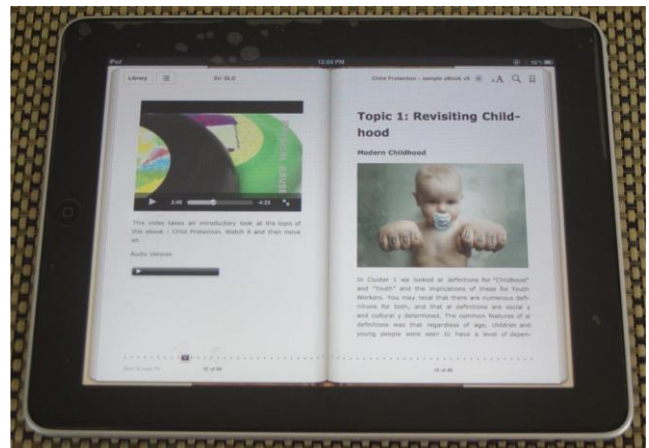
## ebook Trial #2 - ePub

Next we settled on ePub as the standard we would test. We tried a basic ePub format and viewed it on an iPad. It worked well. The text was all resizable and the images worked well.

The issues encountered were that the Table of Contents didn't work, there was no nice descriptive cover and we had no media in it. It was text and images only with a few hyperlinks.

## ebook Trial #3 - ePub Refined with some HTML5 for media

The next series of ebooks we produced were enhancements to the original ePub. We used [Calibre](#) to convert a Word document to an ePub and added the cover, used [Sigil](#) to edit that ePub for fine tuning and add the table of contents, and then manually delved into the raw code of the files to add the HTML5 video and audio tests. Sound complicated? It was .... but only the last bit really. Through all of this we arrived at what we think is a relatively simple formula for delivering an ebook.



## Issues we encountered

We found a few issues in developing our ebook for this project from both a technical and an organisational angle. Since eBooks are a relatively young technology there aren't mature resources of well-trodden paths to follow.

Recently Apple's Pages word processor has added functionality to export directly to ePub format however we were not able to experiment with that during our project. Perhaps in the future this will be a standard feature of many widespread software packages.

Working across multiple devices was something that we expected to have difficulty with however since many of the major devices our students were using supported ePub we actually discovered very few obstacles in the testing phase.

## Marketing and Promotion

SUQld plans to showcase our ebook formats and learnings through this project at the mid-year framework event, EyeQ 2.0 in Brisbane.

We have been in conversation with a Mac Education representative in Brisbane and hope to gain an iTunes U account for both our audio and video and iBook content very soon.

The release of our ebook content is planned to coincide with the 25th Year Celebrations of our YMIS Youth Work training program. The ebook being available in a number of formats and at a number of locations creates a marketing opportunity and help us promote the quality of our content to current and potential students.



## Useful Links

### ebook Marketing

An ebook marketing guide <http://www.guidetoebookmarketing.com/>

### Understanding HTML5

Apple Developer Website: <http://developer.apple.com/>

Dive into HTML5: <http://diveintohtml5.org/>

HTML 5: <http://en.wikipedia.org/wiki/HTML5>

Kultura Video Player: <http://www.html5video.org/kaltura-html5/>

The HTML5 Test: <http://html5test.com/>

### Making ebook Covers

CoverActionPro <http://www.coveractionpro.com/>

Trusty Covers <http://www.trustycovers.com/>

### People to Follow

Mike Cook

**@epub** Manchester

*Free EPUB eBooks for eReaders including the iPad, Sony, Android, Nook, etc. Unleash your books with EPUB*

Liza Daly

**@liza** Somerville, Massachusetts

*Publishing technology geek. Owner of Threepress Consulting and developer of Bookworm, ePub Zen Garden & Ibis Reader.*

Joshua Tallent

**@jtallent** Austin, Texas

*eBook Guru, entrepreneur, husband, father, and Torah observant messianic. I follow friends here and business contacts*

**References:**

The collapse of Book Stores

<http://www.businessspectator.com.au/bs.nsf/Article/Online-retail-books-publishing-e-Books-pd20110222-EB2GA?OpenDocument&src=spb>

When is a book not a book?

[http://www.businessweek.com/technology/content/oct2010/tc20101015\\_865569.htm](http://www.businessweek.com/technology/content/oct2010/tc20101015_865569.htm)

The Future of Reading















<http://www.wired.com/wiredscience/2010/09/the-future-of-reading-2/>

The Horizon Report 2011

<http://www.nmc.org/publications/2011-horizon-report>

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## Appendix A: Supporting Hardware

Hardware Reader 	Plain text 	PDF 	ePub 	HTML 	Mobi-Pocket 	Fiction- Book (Fb2) 	DjVu 	Broadband eBook (BBEB) <sup>1</sup> 	eReader <sup>1</sup> 	Kindle <sup>1</sup> 	WOLF <sup>1</sup> 	Tome Raider <sup>1</sup> 	Open eBook <sup>2</sup> 
Amazon Kindle 1	Yes	No	No	No	Yes	No	No	No	No	Yes	No	No	No
Amazon Kindle 2, DX	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	No	No	No
<a href="#">Amazon Kindle 3</a>	Yes	Yes	No	No	Yes	No	No	No	No	Yes	No	No	No
Android Devices	Yes	Yes	Yes	Yes	Yes <sup>[h 3][21]</sup>	Yes	Yes <sup>[h 3][22]</sup>	No	Yes <sup>[h 3][23]</sup>	Yes	No	Yes <sup>[h 3][4]</sup>	Yes <sup>[h 3][24]</sup>
Apple iOS Devices	Yes	Yes	Yes	Yes	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	No	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	No	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>
Azbooka WISereader	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
<a href="#">Barnes &amp; Noble Nook</a>	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No
Bookeen Cybook Gen3, Opus	Yes	Yes	Yes <sup>[h 4]</sup>	Yes	Yes <sup>[h 4]</sup>	Yes <sup>[h 5]</sup>	No	No	No	No	No	No	Yes
COOL-ER Classic	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
<a href="#">Foxit eSlick</a>	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No
Hanlin e-Reader V3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No
Hanvon WISereader	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
iRex iLiad	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No	No
Irriver Story	Yes	Yes	Yes	No	No	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	No	No	No	No	No	No
Kobo eReader	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No
Nokia N900	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
NUUTbook 2	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No
OLPC XO, Sugar	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	No
Onyx Boox 60	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Windows PC	Yes	Yes	Yes	Yes	Yes	?	Yes	?	Yes	Yes <sup>[h 6]</sup>	?	?	Yes
Pocketbook 301 Plus, 302, 360°	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Sony Reader	Yes	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No
Viewsonic VEB612	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Windows Phone 7	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No

Wikipedia 21/04/2011 [http://en.wikipedia.org/wiki/Comparison\\_of\\_e-book\\_formats](http://en.wikipedia.org/wiki/Comparison_of_e-book_formats)

## Appendix B: Features of Formats

Format	Filename extension	DRM support	Image support	Table support	Sound support	Interactivity support	Word wrap support	Open standard	Embedded annotation support	Book-marking
<a href="#">Plain text</a>	.txt	No	No	No	No	No	Yes	Yes	No	No
<a href="#">HTML</a>	.html	No	Yes	Yes	No	No	Yes	Yes	No	No
<a href="#">PostScript</a>	.ps	No	Yes	?	No	No	No	Yes	?	?
<a href="#">Portable Document Format</a>	.pdf	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
<a href="#">DjVu</a>	.djvu	?	Yes	Yes	No	No	No	Yes	Yes	Yes
<a href="#">EPUB (IDPF)</a>	.epub	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<a href="#">FictionBook</a>	.fb2	Yes	Yes	?	No	No	Yes	Yes	Yes	?
<a href="#">Mobipocket</a>	.prc, .mobi	Yes	Yes	Yes	No	No	Yes	Yes <sup>[citation needed]</sup>	Yes	Yes
<a href="#">Kindle</a>	.azw	Yes	Yes	Yes <sup>[11][19]</sup>	Yes <sup>[2][20]</sup>	No	Yes	No	Yes	Yes
<a href="#">eReader</a>	.pdb	Yes	Yes	?	No	No	Yes	No	Yes	Yes
<a href="#">TealDoc</a>	.pdb	Yes	Yes	?	No	No	Yes	Yes	?	Yes
<a href="#">Broadband eBook</a>	.lrf, .lrx	Yes	Yes	?	No	No	Yes	No	?	?
<a href="#">WOLF</a> <sup>[disambiguation needed]</sup>	.wol	Yes	Yes	?	No	No	No	No	?	?
<a href="#">Tome Raider</a>	.tr2, .tr3	Yes	Yes	?	No	No	Yes	No	?	?
<a href="#">ArghosReader</a>	.aeh	Yes	Yes	?	No	No	Yes	No	?	Yes
<a href="#">Microsoft Reader</a>	.lit	Yes	Yes	?	No	No	Yes	No	?	Yes
<a href="#">Multimedia EBook</a>	.exe	Yes	Yes	?	Yes	Yes	No	Yes	Yes	Yes
<a href="#">Repligo</a>	.rgo	?	Yes	Yes	No	No	Yes	No	No	No

Wikipedia 21/04/2011 [http://en.wikipedia.org/wiki/Comparison\\_of\\_e-book\\_formats](http://en.wikipedia.org/wiki/Comparison_of_e-book_formats)

## ***Appendix C: How to Make an ePub eBook Using Free Tools***

# **How to Make an ePub eBook Using Free Tools**

This guide aims to help you step by step in making an eBook using only free or open source tools. There are always new ways to do things emerging but at the moment we found this a good process.

## **What is an eBook?**

An eBook is an electronic book. It is designed to be read on an electronic device like an eReader, phone or tablet computer. It is portable, self contained and yet can contain text, images, media and hyperlinks.

## **What is ePub?**

ePub is one type of eBook format. It is an open standard and it is supported by a large proportion of devices.

Technically, an ePub file is a .zip file which means it is a single compressed file of many other files that make up the eBook including the text, images, media etc

The actual layout of the book is xhtml which means that an ePub file is really a compressed type of website that the software can display as your eBook. this is important for a few reasons.

When you are laying out your initial eBook, you do that more like you would a website that say a PDF or newsletter. There aren't any pages in the ePub format because every reader is different and people like the font size certain ways. The text must therefore be flowing to allow for this.

Secondly, when it comes time to add media or do any manual editing, you will notice that certain files need to be in the right folders and you have to unzip and zip the contents.

## **Writing the eBook**

You simply write the ebook like you would any other document. You can use a word processor, cut and paste and all the other features. You can even use Notepad, or any simple text editor.



The only real difference is that you should not add any formatting to the initial file. No need to add bold, underline, change font sizes for headings etc at this stage.

You can add images where you need them however you should treat formatting very simply. The eBook will display images without wrapping and in the centre generally. Resize your images as if for the web. I suggest 800px maximum. All images are included in the ePub file so any space you can save keeps the final file size down.

You can add hyperlinks now if you like but they can also be added later.

## Converting to ePub format

Download and install [Calibre](#) which is an eBook conversion and management tool.

Now find the ebook file you have made in Open Office, Google Docs or whatever you used and simply drag it into Calibre. It should add it to its list of eBooks but it hasn't converted it yet.

First you should edit the metadata which is the information about the book such as author, year of composition, publisher etc. Simply select the book and hit the "Edit Metadata" button. Fill in the blanks as required.

Now select your book and use the convert button to open a dialogue window. Choose ePub as your format and there are many options you can play with. I used all the defaults. At this point you will want to add your cover image. Simply choose a jpg, gif or png file on this page before hitting 'convert'.

After a second of processing it will complete.

I then exported the ePub to somewhere that I could find it (like your desktop) by selecting the ePub and clicking the large "Save to Disk" button.

**So now you have a fairly plain, unformatted ePub file. It will open now on an eReader and work just fine. All we are doing from here is cosmetic and improving the user experience.**

## Fine Tuning the ePub

Download and install [Sigil](#) which is an ePub editor.

Open the epub that you just saved from Calibre. Now you can begin the extra formatting adding headings, and moving images that are misplaced. You can add images, links and text decoration here.

You will notice that rather than designating font sizes etc here you are taking a more web-like style sheet approach and naming them Heading1, Heading 2 etc from the Format dropdown. Normal text is 'normal' in that list.

Once again you can do a lot of editing here until you get it just right.

Next step while in Sigil is to generate the Table of Contents. This can be done automatically based on the Heading levels you have chosen. Once you understand this you can choose the right formatting to control your eBook structure. To generate this structure hit the button in the bottom left called "Generate TOC from Headings".

**Now you have a much better looking eBook with a table of contents. Save the file and you have a finished product.**

## **Adding Video and Audio using HTML5**

This bit is the trickiest bit by far! I got a lot of help from [this blog](#).

Remember how I said that epub files were really zip files. Well you need to remember that here.

**Before you do this, take a backup of your ebook which is now finished without any media in it.**

Now rename the ePub file you have made from \*\*\*\*.epub to \*\*\*\*.zip ... and then unzip the file to a known location. Go and have a look and you will see many files and folders there. That is your ebook in a raw state and we are about to go play in it.

Now to convert your video to mp4. I only made mine about 480x320 pixels. Also convert your audio to MP3 or similar.

Next create a folder in \*\*\*\*/OEBPS/Text/ folder in your ebook called video and another called audio while we are at it. Copy your video into the video folder and audio into the audio folder.

Now open the main xhtml file in the \*\*\*\*/OEBPS/Text/ directory (it should look something like Section0001.xhtml). You will see your html of your ebook. Find where you want the video to appear in the book and add this code where the video is the name of your video ...

```
<video src="video/testvideo.mp4" controls="true" width="320" height="240"
autoplay="false">This is an introductory video</video>
```

The audio player code is:

```
<audio src="video/testvideo.mp4" controls="true" autoplay="false">This is an  
introductory audio</audio>
```

Now you have to add a reference to those files in another file called content.opd in the OEBPS directory. Simply add this line before the </manifest> tag:

```
<item id="video1" href="video/testvideo.mp4" media-type="video/mpeg4" />  
<item id="audio1" href="video/testaudio.mp3" media-type="video/mpeg3" />
```

Now, zip all the files together again and then rename it to the .epub extension and you are ready to test your ebook!

If you have an Apple device you will need to drag the file to itunes and it will add it to your Books ...then sync to your device.

Alternatively you can email the file to yourself and click the attachment in the email. The device will ask if you want to open it in iBooks.