E-books – a key to greater accessibility

Andrew Lovell-Simons
Macquarie University Accessibility Services – a unit of the Learning and Teaching Centre
Macquarie University

Sharon Kerr
Macquarie University Accessibility Services – a unit of the Learning and Teaching Centre
Macquarie University

Macquarie University Accessibility Services (MQAS) converts learning materials into accessible formats for students with access needs. The process is time and labour intensive and with unrealistic timelines can result in materials being delivered late. If learning materials were initially published directly in an accessible format, resources would be saved and students would receive their learning materials on time.

The emergence of the e-book allows students easier and faster access to content with choice and control over its delivery mode. When content is published directly as an e-book in ePub format, it can be read on a number of e-readers. Additionally, students using an iPad can change the font style and size to suit their needs or listen to content using iOS's built in text-to-speech software.

An academic's new book, *Foundations of College Music Theory* was published straight to this format, allowing students faster access to their learning materials and the ability to listen to them.

Keywords: Accessibility, e-book, ePub publishing format, iPad assistive technology, text to speech, music theory

Conference themes - Equity of experience

This poster documents the publishing of an academic text directly to the ePub format, bypassing the traditional print publishing route and giving students equitable access to their learning materials, without the need for reverse engineering. Using an iPad, students can read their learning materials, in the font and size of their choice, or listen to them being read out using the iPad's text-to-speech function.

Background/Context

Annually Macquarie University Accessibility Services spend 42,000 hours converting print content into accessible formats for students with access needs. This is expensive and time-consuming and students experience delays in receiving their learning materials, due to the volume of content and labour intensive nature of the conversion process. The project aims to find a universal design solution to the inequity of access to information and knowledge. The emergence of e-books provides an opportunity to explore the efficacy of direct publishing by academics into an accessible ePub format.

All parties set out to:

* Develop a media-rich text book available to all students at a low cost
* Present the Higher Education sector with a proof of concept, showing the successful implementation of universal design principles in the developing of e-books for the iPad
 *Develop the content in a format that allows students with sensory and learning disabilities access, using the accessibility features of the iPad
*Establish the resourcing required to facilitate the publishing of an e-book from concept to publication

Outcomes

1. A working methodology was developed where the Academic and Educational Developer and the E-book Development Team interacted to produce an academic text that was published directly to ePub format (by passing traditional print publishing) and available to download onto an iPad:

This methodology involved:
a. Mocking up the content in a Word document
b. Prototyping one chapter in ePub format
c. Evaluating with the academic the content and layout of the one chapter in ePub format
d. Developing the full book in ePub format
e. Evaluating with the academic the full book content and layout in ePub format
f. Completing the book in ePub format
g. Securing an ISBN number for the e-book

2. An academic text, *Foundations of Music Theory,* by Professor Suzanne Court was published directly to ePub format for students to download and then read or listen to on their iPad.

3. The research yielded the following e-book project timelines and specifications
E-Book Title:
Foundations of College Music Theory
Length: 400 pages consisting of 26 chapters of 18pt Sans Serif text in Word, 500 images and 180 audio files

Educational Development hours:
Discussing content, planning layouts, formats, diagrams etc = 70 hours

Design hours:
Formatting, resizing & optimising 500 graphics = 70 hours
Optimising 180 audio files = 10 hours

Publishing hours:
Converting content into ePub format and creating e-book = 30 hours

Total hours = 180

4. This research resulted in a new, shorter and faster publishing model. Whilst the Print Publishing Model consists of 11 stages, commencing with the academic's writing and ending with the student listening to the reverse engineered content, the new e-book publishing model has only 7 stages, with no reverse engineering.

The two models are set out below:

The 11 stage Print Publishing Model
1. Academic writes content
2. Academic works with editor
3. Registering the book with an ISBN number
4. Printing the book
5. Promoting the book
6. Distributing the book
7. Student purchases book
8. Book is given to MQAS
9. MQAS strips and scans the book
10. MQAS converts the book into electronic text

11. Student listens to the book on their computer using third party software

The new 7 stage e-book Publishing Model
1. Academic writes content
2. Academic works with Educational Developer and e-book Development Team
3. Registering the e-book with an ISBN number
4. Promoting the e-book primarily through new media channels
5. Distributing the e-book online via iTunes, online stores and LMSs
6. Student downloads the e-book
7. Student listens to e-book on iPad using the text to speech reading software

References:

Barnes, C. (2007). Disability, higher education and the inclusive society. *British Journal of Sociology of Education,* 28:1, 135- 145.

Chapman, V. (2008). Developing Inclusive Curricula, *Learning and Teaching in Higher Education*, 3, 62-89

Hardaker, G. Sabki, A. & Dockery, R. (2010). Cognitive Learning Styles and Digital Equity: Searching for the Middle Way. *International Journal of Inclusive Education.* 14, 777 -794.

Kerr, S. and Baker, M. (2011, in press) Six practical principles for inclusive curriculum design. In B. Tynan & J. Willems (Eds.), *Education 2011-2021 SUMMIT, Volume 2: Micro-level research in distance and flexible learning*.Edmonton: Athabasca University Press.