



# *University of* **HUDDERSFIELD**

## **University of Huddersfield Repository**

Devenney, Amy, Sarjantson, Maggie, Stone, Graham and Thompson, Sarah

The experience of student use of eBooks on mobile devices

### **Original Citation**

Devenney, Amy, Sarjantson, Maggie, Stone, Graham and Thompson, Sarah (2015) The experience of student use of eBooks on mobile devices. Working Paper. Northern Collaboration, Middlesbrough. (Unpublished)

This version is available at <https://eprints.hud.ac.uk/id/eprint/27871/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: [E.mailbox@hud.ac.uk](mailto:E.mailbox@hud.ac.uk).

<http://eprints.hud.ac.uk/>

# THE NORTHERN COLLABORATION

The experience of student use of eBooks on mobile devices

A briefing paper

Amy Devenney (University of Huddersfield)

Maggie Sarjantson (University of Hull)

Graham Stone (University of Huddersfield)

Sarah Thompson (University of York)

Northern Collaboration Content Special Interest Group

July 2015

<http://dx.doi.org/10.5920/hud.2016.27871>

Article copyright: © 2016 The Authors. This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)



## Executive Summary

### Background

In summer 2014 the Northern Collaboration (NC) Steering Group asked the Content Special Interest Group (SIG) to develop a briefing paper about using eBooks on mobile devices. The idea was based on several projects that had highlighted issues in this area, and for users with disabilities.

### Scope

The focus was eBooks purchased from the five main aggregators: Askew and Holts (VLeBooks), Coutts (MyLibrary), Dawson (DawsonERA), EBL, and Ebrary. eBooks bought directly from publishers were not included.

It had been assumed that using eBooks on a PC was a standard, straightforward experience, and that difficulties arose when using a mobile device. To allow comparison, tests were conducted using eBooks from each aggregator's platform on a PC, an iPad Air, an ASUS Transformer Android tablet, a Samsung Galaxy Android tablet, and a Kindle Fire.

### Main conclusions

- Licences are inconsistent across the five suppliers
- Licences rarely detail important access and Digital Rights Management (DRM) information
- The user experience varies significantly in the 'online reader' and download modes
- Online reading is affected by the functionality of the aggregators' individual eBook readers
- Users have to learn how each online reader works
- Downloading is dependent on third-party software or apps. Functionality is relatively limited but the user's experience is consistent across the aggregators as they all use Adobe and Bluefire reader

*The SIG would welcome the views of the Directors' Group and the Steering Group on the findings of this paper. In particular, it would be useful to have their endorsement of the recommendations*

### Key recommendations

- Take this paper to the KB+ Library Advisory Group to inform the KB+ eBooks initiative (1.0)
- Take this paper to Jisc Collections, SCONUL, and the National Books Framework to assist with contract and licencing discussions (3.0)
- Institutions should aspire to provide Adobe Reader, Adobe Digital Editions, JavaScript software on all student desktops within the Northern Collaboration universities to improve the student experience (4.0)
- NC libraries encourage, possibly via a learning exchange, broader user education of how eBooks work, the potential challenges and the extent of the libraries' responsibility (5.4)
- The Content and Enabling SIGs are encouraged to undertake further work to understand the accessibility issues highlighted in this paper (6.0)
- Share the findings of this paper with the suppliers to encourage dialogue within the whole community in order to improve the user experience. Key issues are licences and third-party software (7.0)
- Disseminate the work via conference papers and an academic journal article (7.0)

## 1.0 Background

In July 2014 the Northern Collaboration (NC) Content Special Interest Group (SIG) was asked by the Northern Collaboration Steering Group to develop a briefing paper on the use of eBooks via mobile devices. The idea arose from a number of projects and workshops that had highlighted issues with the users' experience of eBooks on mobile devices, and accessibility for users with disabilities.

The University of Huddersfield was investigating the eBooks experience for mobile users and accessibility issues for users with a disability. In addition, work at the Hull York Medical School (HYMS) was underway to understand mobile use. This project used evaluation and focus groups to draw up a matrix. After being brought to the attention of staff at Huddersfield during a SCONUL/Jisc eBooks co-design workshop in Sheffield, the idea of a matrix was further developed by Huddersfield who divided it into four parts:

- Licence – while there may be legitimate complaints about mobile use, it is important to check what is permitted by the suppliers' licences first. If the licence prohibits a certain use then the fault is not with the interface. DRM could be an issue
- Platform – it was decided to use the platform (or online reader), i.e. the user experience of eBooks on a PC, as a control. Again, if the platform did not allow a certain action, then the mobile experience may not either
- Mobile interface – actual testing of the mobile experience to see what could be done
- Accessibility – a series of questions to be asked as part of focus groups or workshops with users with disabilities. This would allow some real user experience to be gathered rather than relying on staff testing certain fixed criteria

The matrix was taken to the Content SIG where a small working group was formed to test the criteria. Manchester Metropolitan University, University of Salford, and the University of York assisted Huddersfield in refining the criteria.

In July 2014, the University of Hull indicated that they had been working on an eBooks evaluation matrix and were invited to join the working group. Hull's work arose from robust student feedback which they wished to understand fully as part of implementing an "eBook first" policy.

At the same time Jisc was considering a project, provisionally called the 'mobile resources check list', and SCONUL was investigating the possibility of a 'charter for eBook platforms'. In October 2014 a discussion was held in London between Kate Price (KCL representing SCONUL), Graham Stone (Huddersfield, representing the NC) and Ben Showers and Mark Williams from Jisc. The discussion looked at the three proposals and aimed to identify the points of intersection between the initiatives and the first recommendation of the SCONUL/Jisc eBooks co-design project, "The cohering recommendation is for the establishment of an eBooks Collaboration Group" (<http://www.jisc-collections.ac.uk/Global/Projects/KB+/KB+%20Documents/140423-ebooks-co-design-report-final.pdf>). It seemed beneficial to bring the projects together and allocate funding. However, the SCONUL and Jisc strands were not pursued so the joined-up project was shelved.

As the NC project has progressed, Jisc Collections have been kept informed, principally via the KB+ eBooks project.

**Recommendation:** This paper is taken to KB+ to inform the KB+ eBooks initiative

There is some repetition in the completed matrix; this is required in order to locate the various pain points. The first iteration was a spreadsheet and a traffic light system was used to check compliance with the criteria. The results are available as Appendices I-IV, and are discussed below.

## 2.0 Scope

The five main eBook suppliers, all of which are in the National Books Framework Agreement, were surveyed: Dawson (Dawsonera), Coutts (MyiLibrary), EBL, Ebrary, and Askews and Holts (VLeBooks).

There are three reasons for this:

- Student feedback consistently highlighted specific issues with some of these platforms
- They account for a significant proportion of the eBooks bought to support teaching and learning in higher education libraries
- Publishers impose restrictions, via DRM and licencing, on how the suppliers may permit end-users to use their content. This includes a range of limits, including on printing, copying, numbers of concurrent users, or number of uses per annum. These factors are reflected in the functionality of the suppliers' eBooks platforms

Tests were conducted using a PC, an iPad Air, an ASUS Transformer Android tablet, a Samsung Galaxy Android tablet, and a Kindle Fire.

Dawson, Askews and Holts, and ProQuest (Ebrary/EBL) have expressed an interest in the findings of this paper, and supporting the accessibility workshops or focus groups. It should be noted that since the project started Coutts has been purchased by ProQuest, and MyiLibrary will be incorporated into the new ProQuest eBooks platform. In the near future this platform will also host EBL and Ebrary.

eBooks purchased directly from publishers were not included for two reasons:

- anecdotally, the libraries have received few, if any, complaints about using these eBooks
- Jisc classifies several of the key publishers as providing "highly accessible" eBooks

### 3.0 Licences

Analysis of the licences revealed them to contain few details. The most important information is the amount of content that can be accessed by downloading, copying, and printing e.g. Digital Rights Management (DRM).

Licence	Dawsonera	MyiLibrary (Coutts)	EBL	VLeBooks (Askews & Holts)	ebrary
Download allowance	100% - for a specific period of time	Can choose to activate a download option	100% - for a specific period of time	100% - for a specific period of time	No information
Copy allowance	usually 10% - restricted by DRM	Yes - subject to publishers restrictions	5% - must be through the on-line system to create a 'hit'	usually 10% - restricted by DRM	No information
Print allowance	usually 10% - restricted by DRM	Yes - subject to publishers restrictions	20% - must be through the on-line system to create a 'hit'	usually 10% - restricted by DRM	No information
Emailing of results	No	No	Yes	Yes	No information

**Table 1.** DRM for the 5 suppliers

Table 1 shows the varying access restrictions imposed by DRM, as outlined in the licences. Student feedback across the libraries shows DRM to be one of the biggest sources of frustration, and a barrier to eBook use on both the suppliers' platforms and mobile devices.

There are two important issues, which should be pursued further:

- Creating a model licence for eBooks, similar to the NESLi2 model licence for e-journals, would simplify interpretation, and addition to KB+ and local ERMs. Such standardization would be welcomed by students, and the staff supporting them, because it would clarify what is permitted
- The suppliers are working with, broadly, the same publishers but appear to have different interpretations of the DRM. There may be commercial reasons for this but a less restrictive approach would benefit students, and, ultimately, may therefore improve sales to libraries

**Recommendation:** Take this paper to Jisc Collections, SCONUL, and the National Books Framework to assist with contract and licencing discussions.

### 4.0 Online reader (Platform)

This section discusses the functionality and experience of using the online reader, the 'platform', across the suppliers surveyed.

A key finding is that the functionality and experience of using a supplier's online reader is the same whether it is accessed from a PC or mobile device (iPad, Android, or Kindle Fire). Therefore the observations below are relevant for all these modes of access (Appendix I).

All five suppliers' online readers require third-party software to be enabled in the web browser (e.g. Adobe Reader, Adobe Digital Editions, JavaScript). This software is not available as standard on all universities student desktops, however if available users can easily access eBooks through the online readers on- campus. The software is freely available online for users to download to their own machines. Therefore, off-campus access should also be relatively straightforward after the initial set-up.

**Recommendation:** Institutions should aspire to provide Adobe Reader, Adobe Digital Editions, JavaScript software on all student desktops within the Northern Collaboration universities to improve the student experience

#### 4.1 Benefits

The features and additional functionality of the suppliers' online readers facilitate the users' reading experience, and provide aids to studying.

Unless otherwise stated, the five suppliers provide the following:

- A freely available bookshelf feature to which users add their favourite titles. This provides quick, easy access to frequently used eBooks, and reduces the need to search the whole collection each time the online reader is visited. Coutts is the exception: the bookshelf is only available with the purchase of an additional 'download' licence
- Text annotation. Askew and Holts, Dawson and EBL allow the notes to be exported as a text file, allowing users offline access. Coutts and Ebrary do not
- Preservation of the original pagination of the text, allowing accurate referencing
- Citation exporting, which works in conjunction with referencing software, such as RefWorks or EndNote, to make referencing quick, easy and accurate
- Table of Contents with hyperlinks to the relevant pages for easy navigation
- Keyword Search with the results hyperlinked to the relevant pages, allowing easy navigation. The search results are shown as a snapshot that includes the highlighted keyword, and the surrounding text. This provides context and allows users to quickly judge if the section may be useful
- Count-down feature for printing and copying allows users to easily see how much of their DRM-restricted allowance remains (see also, 4.2 Disadvantages)

## 4.2 Disadvantages

Despite the benefits that can be exploited through the suppliers' online readers, there are a number of inconsistencies across the different platforms, see Table 2. These can cause confusion for users and diminish their experience of using eBooks.

Platform (online reader)	Dawsonera	MyiLibrary	EBL	VLeBooks (Askews & Holts)	ebrary
Access					
Download allowance	100% - for a specific period of time	Yes- depending on licence purchased	100% - for a specific period of time	100% - for a specific period of time	100% or chapter - for a specific period of time
Copy (download permanently) allowance	at least 10%	10%	5%	10%	15%
Print allowance	at least 10%	10%	20%	10%	30%
Emailing of results	No	No	Yes	Yes	No

**Table 2.** The download, copy and print allowance from the Online Reader

- Downloading as a short-term loan is not standardized although most suppliers allow, within the standard licence, 100% of the eBook to be downloaded to a PC or mobile device for a specific period of time. For more information, see, 5.0 Device (Download)
- Content (single titles, subject collections, or a publisher's whole catalogue) can be removed from the platforms, sometimes at short notice, because the publishers change the terms of their agreements with the aggregators. This negatively affects libraries' support for learning and teaching. It is not easy to inform users of these changes
- Changes to the terms of use may be made at short notice because the publishers amend their agreements with the suppliers. For example, Pearson recently removed the option of downloading its eBooks from many online readers
- Copying (as a permanent download, or using the copy and paste function) allowances vary from 5% of the total pages (EBL) to 15% (Ebrary)
- Printing allowances vary from 10% of the pages up to 30%

It is probable that these variations are the result of individual agreements between the suppliers and publishers. A more consistent, and fair, user experience would result from all the platforms adhering to the regulations of the Copyright Licensing Agency, although in some cases this could see a reduction in allowances in some cases. However, the extent to which varying print allowances actually affects users is questionable as few users print from eBooks, e.g. less than 1% (528 out of 54769 individual uses) for EBL eBooks at the University of Huddersfield in the last academic year.

There is also an issue surrounding content removal and change and the role of web scale discovery vendor knowledge bases regarding how quickly they are updated and whether there is any notification. This could be something for KB+ to take up in the future.

## 5.0 Device (Download)

This section examines the experience of using eBooks when they are downloaded from the suppliers' platforms on to mobile devices. For the purpose of this paper downloaded titles were tested on a PC, an iPad Air, an ASUS Transformer Android tablet, a Samsung Galaxy Android tablet, and a Kindle Fire. During the testing all of the files downloaded were PDFs.



The majority of the suppliers allow 100% of the book to be downloaded for a specific period of time as a short-term loan. Coutts (MyiLibrary) is the only supplier surveyed that requires the purchase of an additional licence to allow downloads. With the possession of the correct licence, all of the titles can be downloaded to be used on either a PC or a mobile device without the Online Reader. Unfortunately, neither Huddersfield nor Hull has the additional licence that allows downloading, so we cannot definitely describe the experience of using a downloaded MyiLibrary title. However, the Bluefire reader app is used by MyiLibrary, so it is plausible to suggest that the functions available and experience would be the same as for the other suppliers using this app. Once downloaded, with the exception of the titles from Dawsonera, all of the titles can be read offline.

Prior to testing, it was assumed that the experience on a particular device resulted from the restrictions imposed by the supplier to comply with the publisher's DRM requirements. However, this study's key finding is that the issues faced, and the limitations of the eBook downloaded on to a particular device, are not due to these restrictions. Rather they are the result of how the app and software, chosen by the suppliers, works on the particular device.

Table 3 shows that the majority of suppliers have chosen the same app and software to manage the downloading of their eBooks as short-term loans. Therefore, the experience of using the eBook with the app/software is consistent regardless of supplier (See Appendices II, III and IV).

As the supplier is immaterial to the user experience, the paper describes using an eBook with a particular app or software on a particular device. Use on a PC is included as the control experience.

	<b>Dawsonera</b>	<b>MyiLibrary (Coutts)</b>	<b>EBL</b>	<b>Ebrary</b>	<b>VLeBooks</b>
<b>PC</b>	Adobe Acrobat	Not known	Adobe Digital Editions	Adobe Digital Editions	Adobe Digital Editions
<b>iOS</b>	Adobe Reader/ Bluefire Reader	Bluefire Reader	Bluefire Reader	Bluefire Reader	VLeBooks App
<b>Android</b>	Bluefire Reader	Bluefire Reader	Bluefire Reader	Bluefire Reader	Bluefire Reader, or VLeBooks App

**Table 3.** Showing which app/software is used by which supplier on which device

## 5.1 PC

With the exception of Dawsonera, which uses Adobe Acrobat, if a title is downloaded on to a PC the software used to read the book is Adobe Digital Editions. Table 4 shows that this software has very limited functionality, comparing poorly to the features available in the suppliers' online readers. These limitations can diminish the experience of using the eBook, and could reduce the educational benefits.

Device	PC (downloaded PDF)				
	Dawsonera	MyiLibrary*	EBL	ebrary	VLebooks
3rd party software required	Yes - Adobe Acrobat	n/a	Yes - Adobe Digital Editions	Yes - Adobe Digital Editions	Yes - Adobe Digital Editions
Access					
Download allowance	No	0	No	No	No
Copy allowance	No	n/a	No	No	No
Print allowance	No	n/a	10%	10%	10%
Emailing of results	No	n/a	No	No	No
Interface					
Help facility?	No	n/a	No	No	No
Responsive design, e.g. text wrap	No	n/a	No	No	No
Original Pagination of text	Yes	n/a	Yes	Yes	Yes
Hyperlinked phrases	No	n/a	No	No	No
Navigation					
TOC	Yes - with hyperlinks to relevant page	n/a	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page
Keyword search	Yes	n/a	Yes	Yes	Yes
Other features					
Note taking/annotation	No	n/a	Yes - no ability to extract notes	Yes - no ability to extract notes	Yes - no ability to extract notes
Highlighting	No	n/a	No	No	No
Citation saving/exporting	No	n/a	No	No	No
Accessibility					
Text resize	Yes - but difficulties with navigation	n/a	No	No	No
Contrast changes	No	n/a	No	No	No
Compatibility with specialised software	No - but there is a basic read out loud function within the online reader	n/a	Yes - Read and Write Gold	Yes - Read and Write Gold	Yes - Read and Write Gold

**Table 4.** Showing the experience of using eBooks downloaded to a PC

#### 5.1.1 Adobe Digital Editions

The interface of Adobe Digital Editions is very basic:

- Limited options to resize the text
- No help facility or documentation that can be accessed offline while using the software
- Basic navigation of the text is via a table of contents with hyperlinks to the relevant pages
- Keyword search does not display all of the results with hyperlinks to the relevant pages. It is necessary to tab through the pages to see each instance of the keyword. This is burdensome, time-consuming and hinders access
- Notes can be added but there is no facility to extract them
- It is not possible to highlight or export the citation.

Although these factors do not necessarily impede the reading of the eBook, their development would make eBooks easier to use, more attractive and more valuable to users in an academic environment.

## 5.2 iOS

As Table 3, above, shows the majority of the suppliers have chosen the Bluefire Reader app to facilitate the reading of their eBooks on both iOS and Android mobile devices (including Kindle Fire). Askews and Holts use Bluefire and have also developed their own app for VLeBooks. The exception is Dawsonera, which uses Adobe Reader when the downloaded file is a PDF rather than an EPUB document.

Table 5, below, shows the experience of using a downloaded eBook on an iOS device using the third-party software and apps. There are benefits and disadvantages to these apps, which also need an Adobe ID to complete access to the eBooks.

### 5.2.1 Benefits

The following points apply to all of the apps:

- Free to download and are readily available through the relevant app store
- Adobe ID is easy to set up, by following the hyperlink on the app, and can be created by the user the first time they access the app. A comprehensive PDF help guide is available
- Retention of the original pagination of the eBook
- Search functionality (See also, 5.2.2 Disadvantages)
- A table of contents that includes hyperlinks to the correct pages
- Keyword search feature

Bluefire reader only:

- Highlight sections of the text and make notes. These are stored on the user's 'Book'. When the loan, and access, expires, the title can be re-download to view the notes. The highlighted sections and notes can be exported via email

### 5.2.2 Disadvantages

- The apps have no functionality to copy (permanently download) or print any of the text (Table 5)
- Keyword search results are not displayed as snapshots of the text with the keyword highlighted. The user has to tab through the results to find those that are useful. This can be time-consuming, and hinders access
- Users are not always aware that they need to download the free apps and set up an Adobe ID in order to use the eBooks. Once advised on the appropriate course of action many users are reluctant to take it. Concerns expressed to staff at Hull include: the user's lack of IT experience or knowledge; costs, even though there are none; risks to the security of their laptop or device; the time it takes to install the apps. In addition, the anti-virus software installed on users' devices can issue warnings that deter people from completing the downloading process. Thus, what should be a quick and straightforward process can be a significant barrier to the use of eBooks
- The Adobe ID is completely independent of the Universities, and outside their control. At Huddersfield users have contacted the Library for their forgotten log-on credentials. The Library was unable to help. This is potentially very frustrating and could disengage the user from eBooks

Device	iOS (downloaded)					
	Dawsonera		MyiLibrary*	EBL	ebrary	VLebooks
	PDF	EPUB***				
3rd party software required	Yes - Adobe Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Adobe ID and VLeBooks App
Download allowance	No	No	No	No	No	No
Copy allowance	No	No	No	No	No	No
Print allowance	No	No	No	No	No	No
Emailing of results	No	No	No	No	No	No
	Interface					
Help facility?	No	Yes	not clear	Yes	Yes	No
Responsive design, e.g. text wrap	No	No	not clear	No	No	Yes
Original Pagination of text	Yes	Yes	not clear	Yes	Yes	Yes
Hyperlinked phrases	No	No	not clear	No	No	No
	Navigation					
TOC	No	Yes - with hyperlinks to relevant page	not clear	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes
Keyword search	Yes	Yes	not clear	Yes	Yes	Yes
	Other features					
Note taking/annotation	No	Yes - ability to export notes by email	not clear	Yes - ability to export notes by email	Yes - ability to export notes by email	Yes
Highlighting	No	Yes	not clear	Yes	Yes	Yes
Citation saving/exporting	No	No	not clear	No	No	No
	Accessibility					
Text resize	No	No	not clear	Yes - but difficulties with navigation	Yes - but difficulties with navigation	Yes
Contrast changes	Yes - basic 1 option	Yes - three options	not clear	Yes - three options	Yes - three options	Yes
Compatibility with specialised software	Needs to be investigated	Needs to be investigated	Needs to be investigated	Needs to be investigated	Needs to be investigated	No

**Table 5.** Showing the experience of books downloaded to an iOS device

### 5.3 Android

Table 6, below, shows that Android devices, including the Kindle Fire, also use the Bluefire Reader app. Therefore, most of the points made in 5.2 are also pertinent. There is one additional disadvantage:

#### 5.3.1 Disadvantage

- Unlike the iOS version, it is not possible to export notes and highlights made on the eBook

Device	Android (downloaded)				
	Dawsonera**	MyiLibrary*	EBL	ebrary	VLebooks
3rd party software required	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and Adobe ID	Yes - Adobe ID and VLeBooks App
	Access				
Download allowance		No	No	No	No
Copy allowance		No	No	No	No
Print allowance		No	No	No	No
Emailing of results		No	No	No	No
	Interface				
Help facility?		not clear	No	No	No
Responsive design, e.g. text wrap		not clear	No	No	Yes
Original Pagination of text		not clear	Yes	Yes	Yes
Hyperlinked phrases		not clear	No	No	No
	Navigation				
TOC		not clear	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes
Keyword search		not clear	Yes	Yes	Yes
	Other features				
Note taking/annotation		not clear	Yes - no ability to extract notes	Yes - no ability to extract notes	Yes - saved in bookmarks
Highlighting		not clear	Yes	Yes	Yes
Citation saving/exporting		not clear	No	No	No
	Accessibility				
Text resize		not clear	Yes - but difficulties with navigation	Yes - but difficulties with navigation	No
Contrast changes		not clear	Yes - basic 1 option	Yes - basic 1 option	No
Compatibility with specialised software		Needs to be investigated	Needs to be investigated	Needs to be investigated	No

**Table 6:** Showing the experience of books downloaded to an Android

#### 5.4 iOS versus Android

Overall, the experience of using eBooks on the Bluefire Reader app was more stable and consistent on the iOS devices than on the Android ones. During the testing of the eBooks, regardless of the supplier, the app on the Android device often froze, timed out or closed down. In part this explains the poor experience that users have reading eBooks on mobile devices. Indeed when testing the various devices, the team did not feel confident that they could use an Android device to read an eBook for a continuous period of time and this is why the Dawson column in Table 6 has not been completed.

**Recommendation:** The Northern Collaboration should encourage, possibly via a Learning Exchange, broader user education of how eBooks work, the potential challenges of downloading, and the extent of the libraries' responsibilities. This would improve the user experience and help to prevent the development of unrealistic expectations of libraries.

## 6.0 Accessibility

Table 7 shows a draft set of exercises and a check list that were written in conjunction with the disability officer at the University of Huddersfield. They were later refined in the NC Content SIG.

<b>Usability testing</b>
Exercises
Retrieving eBook title via Summon (or other discovery system)
Finding specific chapter
Finding reference in index
Retrieving relevant page
Using search feature within eBook
Returning to eBook content page
General comments
Note taking/annotating
Downloading
Printing
Emailing
Citation saving/exporting
Ease of use/intuitiveness
Accessibility
Text resize
Contrast changes
Compatibility with specialised software
Images, charts and tables accessible

Table 7. Usability exercise and checklist

Originally a workshop was going to be held at Huddersfield to test the Dawson eBooks interface (with sponsorship from the supplier). A new mobile interface launch postponed this, and it then became too late in the academic year to take things forward. Some user testing, relatively limited in reach, was carried out at both Hull and HYMS as part of their initial eBooks evaluation projects.

Since then, the Northern Collaboration Enabling SIG has been established, and the Co-ordinator of the Group was invited to the Content SIG meeting at Teesside University in April 2015. There is potential for both groups to take on disability testing of these platforms across the whole Northern Collaboration, which could build up a large amount of intelligence for both libraries and suppliers.

Changes to the non-medical help provisions of the Disabled Students' Allowance (DSA) come into force for 2016-2017. The book fund will be removed from the DSA placing the onus on libraries to provide alternative services and support. Wide-scale provision of eBooks is one facet of this but only if those eBooks are accessible, user-friendly, and provide a relatively consistent experience across the various platforms. This reinforces the need for engagement with suppliers, publishers, and the wider community to resolve the issues identified in this paper.

**Recommendation:** The Directors' Group and the Steering Group encourage the Content and Enabling SIGs to undertake further work testing eBook accessibility.

## 7.0 Conclusion

Higher education, and information technology are rapidly evolving fields in which libraries seek to meet increased student demand and expectations. Many libraries have responded by implementing e-first policies, and eBooks account for a significant, and growing, proportion of spend. eBooks are marketed as “anytime, anyplace” study resources. However, user expectations are often shaped by their use of products such as Kindles, and iBooks. They therefore express dissatisfaction with the DRM-restricted eBooks provided via the library suppliers, and the need to download third-party software. User feedback was an impetus for several of the projects undertaken by members of the Content SIG.

In testing the suppliers’ platforms, both to read eBooks online and to download them to devices, the Group reached the following broad conclusions:

- The licences are inconsistent across the five suppliers. The majority are not sufficiently detailed to inform eBook use
- It was incorrectly assumed that the experience of using the suppliers’ online readers was synonymous with using eBooks on a PC, and that this would thus be the control against which mobile devices were assessed. However, this study has highlighted that it is not the PC versus mobile device experiences that need examining. It is the use of the suppliers’ online readers compared to the downloaded eBooks, whether on a PC or a mobile device, that requires further study
- Whereas the online experience is dependent on the suppliers’ development of their online readers, the download experience is determined by the third-party software or app used to access the eBook either on a PC or on a mobile device. Therefore, although the online experience varies by supplier, the download experience is generally consistent because they mainly utilise the same third-party software, Adobe Digital Editions, and app, Bluefire Reader, which provide the same functionality and experience
- Despite the consistency of the download experience, the limited functionality and accessibility means that users can be deterred from using eBooks, and that their exposure to the full range of learning materials may therefore be negatively affected
- To help users overcome the challenges, libraries should reconsider their eBooks support activities and documentation

The Libraries in the Northern Collaboration are not alone in seeking to understand and overcome these issues. It would be beneficial to share knowledge and practice with others in the wider community, both in higher education and elsewhere, e.g. suppliers.

**Recommendation:** Share the findings of this paper with the suppliers to encourage dialogue within the whole community in order to improve the user experience. Key issues are licences and third-party software

**Recommendation:** Disseminate the work through conference papers and an academic journal article

## 8.0 Recommendations

Following on from the conclusions reached in the paper, the Content SIG would like to put forward the following recommendations:

- Take this paper to the KB+ Library Advisory Group to inform the KB+ eBooks initiative (1.0)
- Take this paper to Jisc Collections, SCONUL, and the National Books Framework to assist with contract and licencing discussions (3.0)
- Institutions should aspire to provide Adobe Reader, Adobe Digital Editions, JavaScript software on all student desktops within the Northern Collaboration universities to improve the student experience (4.0)
- NC libraries encourage, possibly via a learning exchange, broader user education of how eBooks work, the potential challenges and the extent of the libraries' responsibility (5.4)
- The Content and Enabling SIGs are encouraged to undertake further work to understand the accessibility issues highlighted in this paper (6.0)
- Share the findings of this paper with the suppliers to encourage dialogue within the whole community in order to improve the user experience. Key issues are licences and third-party software (7.0)
- Disseminate the work via conference papers and an academic journal article (7.0)

## 9.0 Acknowledgements

The authors would like to thank Briony Heyhoe-Pullar, former Acquisitions Manager at the University of Huddersfield who championed the original work at Huddersfield, colleagues at Manchester Metropolitan University and the University of Salford for their assistance with the original data collection and the NC Content SIG for assisting in revising and refining this briefing paper.



## Appendix I

Platform (online reader)	Dawsonera	MyLibrary	EBL	VleBooks (Askews & Holts)	ebrary
Formats (incl.DRM)					
3rd party software require	Yes - Adobe Reader and Adobe Digital Editions	Yes - JavaScript must be enabled in your browser and Adobe Digital Editions	Yes - Adobe Reader and Adobe Digital Editions	Yes - JavaScript must be enabled in your browser	Yes - Adobe Reader and Adobe Digital Editions for downloads
HTML	No	No	No	No	No
Embedded PDF	Yes	Yes	Yes	Yes	Yes
Downloadable PDF	Yes	Yes - depending on licence purchased	Yes	Yes	Yes
EPUB	Yes	No	Yes	Yes	No
Other	No	OeB	No	not clear	No
Access					
Download allowance	100% - for a specific period of time	Yes- depending on licence purchased	100% - for a specific period of time	100% - for a specific period of time	100% or chapter - for a specific period of time
Copy (download permanently) allowance	at least 10%	10%	5%	10%	15%
Print allowance	at least 10%	10%	20%	10%	30%
Emailing of results	No	No	Yes	Yes	No
Bookshelf feature	Yes	Yes - depending on licence purchased	Yes	Yes	Yes

Platform (online reader)	Dawsonera	MyLibrary	EBL	VLEBooks (Askews & Holts)	ebrary
Interface					
Help facility?	Yes	Yes	Yes	Yes	Yes
Responsive design, e.g. text wrap	No	No	Yes	Yes	Yes
Original pagination of text	Yes	Yes	Yes	Yes	Yes
Hyperlinked phrases within the text	No	No	No	No	No
Navigation					
TOC	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page
Keyword search	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page
Other features					
Note taking/annotation	Yes - with the ability to export as a text file	Yes - with the ability to print the notes	Yes - with the ability to export as a text file	Yes	Yes - with the ability to copy and paste, or email folder
Highlighting	No	No	No	No	Yes
Citation saving/exporting	Yes	Yes	Yes	Yes	Yes
Accessibility					
Text resize	Yes - but difficulties with navigation	Yes - up to 400% but difficulties with navigation	Yes - up to 400% but difficulties with navigation	Yes	Yes
Contrast changes	No	No	No	Yes	No
Compatibility with specialised software	No	Yes - JAWS software	No - but there is a basic read out loud function within the online reader	Not clear	Yes - JAWS, NVDA, or VoiceOver

Device	PC (downloaded PDF)				
	Dawsonera	MyLibrary*	EBL	ebrary	VLebooks
	Formats (incl.DRM)				
3rd party software required	Yes - Adobe Acrobat	n/a	Yes - Adobe Digital Editions	Yes - Adobe Digital Editions	Yes - Adobe Digital Editions
HTML	No	n/a	No	No	No
Embedded PDF	No	n/a	No	No	No
Downloadable PDF	Yes	n/a	Yes	Yes	Yes
EPUB	No	n/a	Yes	Yes	Yes
Other	No	n/a	No	No	not clear
	Access				
Download allowance	No	0	No	No	No
Copy allowance	No	n/a	No	No	No
Print allowance	No	n/a	10%	10%	10%
Emailing of results	No	n/a	No	No	No

Device	PC (downloaded PDF)				
	Dawsonera	MyLibrary*	EBL	ebrary	Vlebooks
	Interface				
Help facility?	No	n/a	No	No	No
Responsive design, e.g. text wrap	No	n/a	No	No	No
Original Pagination of text	Yes	n/a	Yes	Yes	Yes
Hyperlinked phrases	No	n/a	No	No	No
	Navigation				
TOC	Yes - with hyperlinks to relevant page	n/a	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page
Keyword search	Yes	n/a	Yes	Yes	Yes
	Other features				
Note taking/annotation	No	n/a	Yes - no ability to extract notes	Yes - no ability to extract notes	Yes - no ability to extract notes
Highlighting	No	n/a	No	No	No
Citation saving/exporting	No	n/a	No	No	No
	Accessibility				
Text resize	Yes - but difficulties with navigation	n/a	No	No	No
Contrast changes	No	n/a	No	No	No
Compatibility with specialised software	No - but there is a basic read out loud function within the online reader	n/a	Yes - Read and Write Gold	Yes - Read and Write Gold	Yes - Read and Write Gold

Device	iOS (downloaded)					
	Dawsonera		MyLibrary*	EBL	ebrary	Vlebooks
	PDF	EPUB***	Formats (incl.DRM)			
3rd party software required	Yes - Adobe Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Adobe ID and VleBooks App
HTML	No	No	not clear	No	No	No
Embedded PDF	No	No	Yes	No	not clear	Yes
Downloadable PDF	Yes	No	Yes	Yes	Yes	Yes
EPUB	No	Yes	Yes	Yes	Yes	Yes
Other	No	No	n/a	No	n/a	n/a
	Access					
Download allowance	No	No	No	No	No	No
Copy allowance	No	No	No	No	No	No
Print allowance	No	No	No	No	No	No
Emailing of results	No	No	No	No	No	No

Device	iOS (downloaded)					
	Dawsonera		MyLibrary*	EBL	ebrary	Vlebooks
	PDF	EPUB***				
	Interface					
Help facility?	No	No	not clear	No	Yes	No
Responsive design, e.g. text wrap	No	No	not clear	No	No	Yes
Original Pagination of text	Yes	Yes	not clear	Yes	Yes	Yes
Hyperlinked phrases	No	No	not clear	No	No	No
	Navigation					
TOC	No	Yes - with hyperlinks to relevant page	not clear	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes
Keyword search	Yes	Yes	not clear	Yes	Yes	Yes
	Other features					
Note taking/annotation	No	Yes - ability to export notes by	not clear	Yes - ability to export notes by email	Yes - ability to export notes by email	Yes
Highlighting	No	Yes	not clear	Yes	Yes	Yes
Citation saving/exporting	No	No	not clear	No	No	No
	Accessibility					
Text resize	No	No	not clear	Yes - but difficulties with navigation	Yes - but difficulties with navigation	Yes
Contrast changes	Yes - basic 1 option	Yes - three options	not clear	Yes -three options	Yes - three options	Yes
Compatibility with specialised software	Needs to be investigated	Needs to be investigated	Needs to be investigated	Needs to be investigated	Needs to be investigated	No

Device	Android (downloaded)				
	Dawsonera**	Myilibrary*	EBL	ebrary	Vlebooks
	Formats (incl.DRM)				
3rd party software require	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and an Adobe ID	Yes - Bluefire Reader and Adobe ID	Yes - Adobe ID and VLeBooks App
HTML	No	not clear	No	No	No
Embedded PDF	not clear	Yes	No	Yes	Yes
Downloadable PDF	Yes	Yes	Yes	Yes	Yes
EPUB	Yes	Yes	Yes	Yes	Yes
Other	n/a	n/a	No	No	n/a
	Access				
Download allowance		No	No	No	No
Copy allowance		No	No	No	No
Print allowance		No	No	No	No
Emailing of results		No	No	No	No

Device	Android (downloaded)				
	Dawsonera**	MyLibrary*	EBL	ebrary	VL ebooks
	Interface				
Help facility?		not clear	No	No	No
Responsive design, e.g. text wrap		not clear	No	No	Yes
Original Pagination of text		not clear	Yes	Yes	Yes
Hyperlinked phrases		not clear	No	No	No
	Navigation				
TOC		not clear	Yes - with hyperlinks to relevant page	Yes - with hyperlinks to relevant page	Yes
Keyword search		not clear	Yes	Yes	Yes
	Other features				
Note taking/annotation		not clear	Yes - no ability to extract notes	Yes - no ability to extract notes	Yes - saved in bookmarks
Highlighting		not clear	Yes	Yes	Yes
Citation saving/exporting		not clear	No	No	No
	Accessibility				
Text resize		not clear	Yes - but difficulties with navigation	Yes - but difficulties with navigation	No
Contrast changes		not clear	Yes - basic 1 option	Yes - basic 1 option	No
Compatibility with specialised software		Needs to be investigated	Needs to be investigated	Needs to be investigated	No