# Advent of Digital Reading and Writing 2022

This is the entire text of the Advent Calendar of the CTL Reading and Writing Lab that appeared in December 2022. It is organised by day. The expanded information will also be made available in a separate ebook organised by category.

Day 1: The reMarkable 2

Innovative eInk **e-reader** and **digital notetaker** popular with people who like to hand-write notes. Beautifully designed but with some limitations.

ℹ About

The reMarkable is a poster child for a new breed of digital e-readers. It lets you **load ebooks or PDFs** and **annotate** them with a **digital stylus**. Or you can just take notes on it and synchronise them with your computer. It even has some ability to recognise handwriting.

👍 Pros

The reMarkable is one of the most **beautifully designed** pieces of hardware. It is a pleasure to hold – light and sleek. It has a magnetic back which is the perfect place to attach the stylus while holding it.

Like others in its category, it has a **display that does not shine a light** into your eyes and the **battery lasts a long time**.

👎 Cons

Compared to others in this category, the reMarkable does **not have illumination** – it needs to external light.

Like most e-readers in this price-range, its display is 10 inches which is **smaller than a page of A4**. This makes reading some academic articles a bit more difficult.

Zooming in and moving around the page is **not as smooth** as on an iPad.

The interaction with text is a bit slower and more limited than on other devices in the space.

It uses a proprietary system for getting content on and off the devices, it is very easy to use but reMarkable charges a subscription for some premium features.

▶ Find out more

If you would like to get some hands on time with the reMarkable or any of our other devices or tools, please **book a visit** to the Reading and Writing Innovation Lab.

✳ Summary

About	**reMarkable 2**:
	eInk note taker and reader
Cost	cca £360 - £480
Pros	- Paper-like writing - Magnetic pen holder - Light - Long battery life
Cons	- No illumination - Slowish software - No external apps - Cost

Day 2: iPad Pro 12.9in
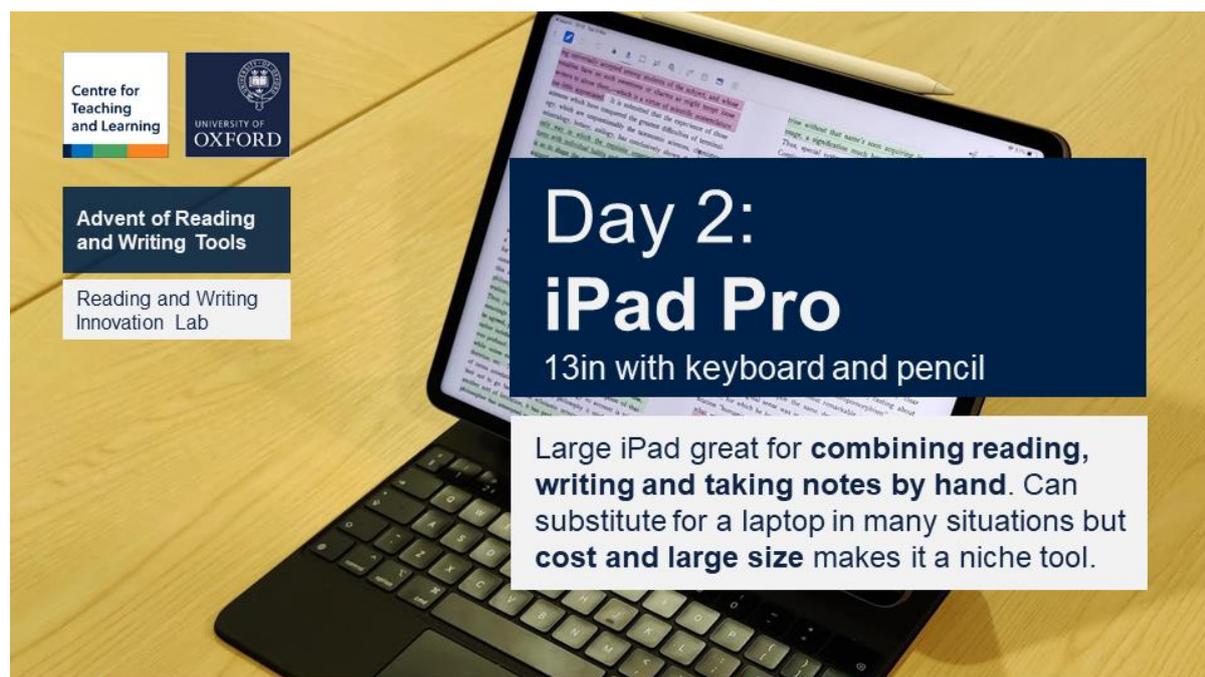
Large iPad great for **combining reading, writing and taking notes by hand**. Can substitute for a laptop in many situations but **cost and large size** makes it a niche tool.

⚅ About

iPads are the platform where most of the innovation in apps is happening at the moment. The large iPad pro is the best way to combine reading in large format with general productivity. It is great for reading and writing drafts with the optional keyboard or taking notes by hand. But it is very heavy and even more expensive, so you must really need the size of the screen to make it worthwhile.

👍 Pros

The availability of reading and note taking apps makes iPads in general the platform to beat.

The 13inches give you extra space for reading A4 pages like academic articles at full size and also give you most space if you like to take notes by hand.

The power of the machine is such that you can run multiple apps side by side and if an app exists for a task like video editing, it will be as powerful as on the computer.

👎 Cons

Price is a real problem. The only real reason to get this iPad for reading or writing is the screen size, but it is bundled with many more Pro features than is needed for most people. So the price is out of reach. It makes little sense to get it without the pencil and some keyboard case which puts the basic price well over £1200 – more double a solid laptop.

Weight is another issue. Tablets are a great laptop companion but unless you want to replace your laptop with this iPad, you are doubling the weight. With the keyboard, it is as heavy as many if not most laptops with this screen size.

Flexibility of iPads is a selling point when compared to ereaders but they are not as flexible as a PC. Particularly in the academic environment, where so much custom is required. You can do a lot of writing done on an iPad but managing a full thesis would be a big chore. Any data management or analysis is going to be very limited if possible at all, as well.

Screen glare is just as bad on the iPad Pro as any other tablet, phone or laptop. This makes it slightly less usable in sun light and could be a real problem for people who want to reduce screen exposure to protect their eyes.

Battery life is generally good on iPads but for extensive reading with frequent note taking, it is much less than on an eReader

▶ Find out more

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◉ Summary

About	**iPad Pro 13in**: Tablet
Cost	£1,000+
Pros	- Large screen - Very powerful (including video editing) - Support many apps - Can be used for reading and writing - Supports other media
Cons	- Very expensive - Heavy and bulky

- Screen glare
- Battery life (compared to eInk devices)

Day 3: C-Pen Connect
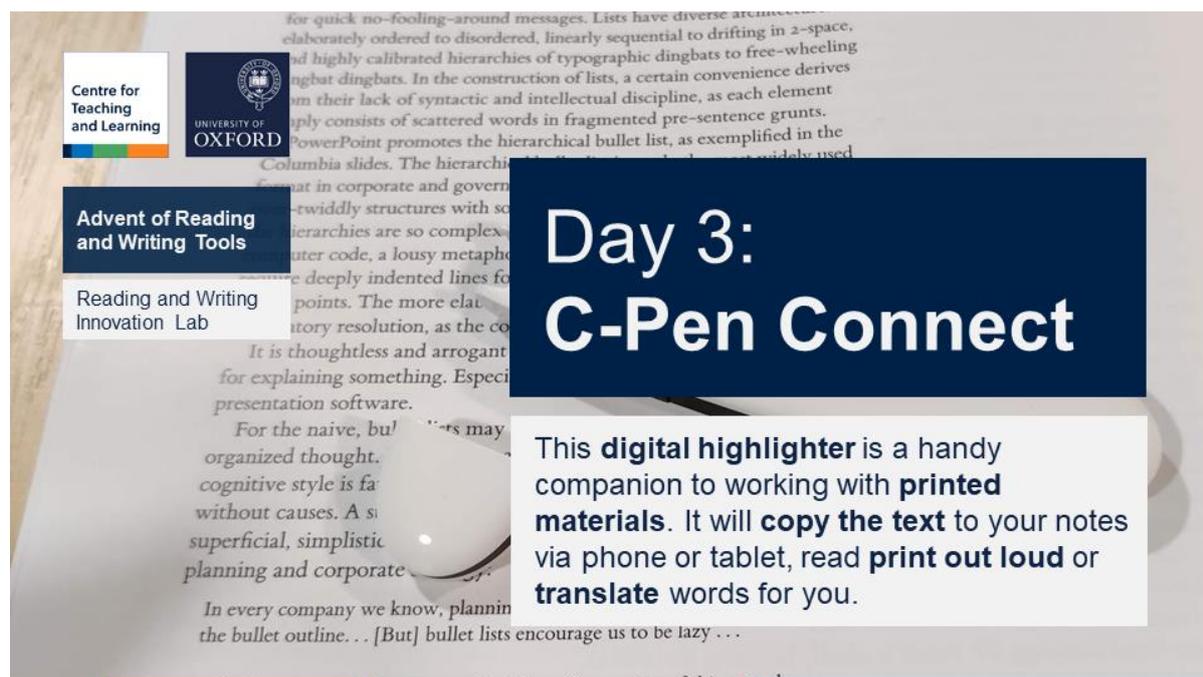
This **digital highlighter** is a handy companion to working with **printed materials**. It will **copy the text** to your notes via phone or tablet, read **print out loud** or **translate** words for you.

ℹ About

C-Pen connect is the cheaper and more flexible alternative to the C-Pen Reader and Lingo pens. It is a great way to anybody to quickly copy text from a printed source into their notes. For many people with print disabilities, it reads any text out and can event translate it via a link to Google translate.

It requires a smart phone or a tablet with a C-Pen app. It connects via Bluetooth and charges via micro USB. It is small and light enough to fit into a small pocket.

Compared to an app on the phone, it is much more expensive and requires more initial set up (e.g. it takes a while to connect, has to be charged). But one in the flow of things, it provides a much smoother experience.

👍 Pros

- Text is available immediately on the phone and is read out using a synthetic voice if necessary.
- Individual lines are automatically appended for larger paragraph.
- It is very accurate in text recognition and covers a large range of font sizes and alphabets.
- It does not require too much precision, fine motor control or strength to keep it attached to paper.

- It is also much cheaper than the stand alone options.

👎 Cons

- It can only scan one line at a time. How much of a problem this is will depend on the use case. It can even be a pro, if we think of it as a highlighter.
- It requires a phone or a tablet to connect to. This means thinking about charging, battery life or possible connection issues with bluetooth.
- It is still quite expensive compared to just an app that does a similar thing. But it is probably worth it to someone who spends a lot of time in libraries.

▶ Find out more

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✦ Summary

About	**C-Pen Connect**: Digital highlighter converts text to audio and copies
Cost	cca £120
Pros	• Connects to phone, tablet, computer • Easy to scan individual lines • High quality recognition • Language support • Cheap for category
Cons	• Only scans line by line • Requires phone/tablet to work

Day 4: MarginNote 3

Reading and note-taking app for **iPad** and **Mac** that focuses on organising highlights, notes, creating flashcards and mind maps.

ⓘ About

MarginNote 3 is one of the leading representative of the huge churn of innovation in reading that started on the iPad and is now spreading to the computer. It is a perfect example of why people shouldn't just open a PDF on their tablet or phone in the default application.

With a bit of practice, it enables much deeper engagement with text. It makes it possible to organise and export highlights and annotations or even create flashcard from them.

It requires a one off payment separately for the iPad and Mac but it also offers an annual subscription for features such as OCRs.

It has rudimentary but functioning text to speech to enable listening but it is not its primary focus (compared to other apps).

👍 Pros

Of all the PDF reading apps on the iPad, it has probably the most features focused on learning from text:

- Creating and exporting MindMaps from highlights and comments
- Tagging annotations
- Creating flashcards for revision
- Support for pen and typing

- Large range of options
- It can combine notes from multiple documents in one outline

Unlike many others, it does have functional built-in support for text-to-speech even if it is not easy to surface or a best-in-class implementation.

It has a desktop app on the Mac which makes it easy to sync for those who use both.

👎 Cons

MarginNote is not the most expensive app but it is not very cheap. There is a free-trial (about 7 or 14 days) but no free tier. This is not that unusual on the iPad, though.

There is not reflow mode, which means that PDFs with very large text will be hard to read. This is again not that different from most PDF reading apps that focus on learning.

It uses a slightly non-standard approach to highlights but this can be worked around with export.

There is no app for Windows which makes it less easy to sync for people who are not on the app. While there's no easy way to work on the mindmaps on Windows, the export feature makes it possible to use other MindMapping apps.

▶ Find out more

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✺ Summary

| About	**Margin Note**: Power PDF reading and note taking app
Cost	cca £12 on iPad + optional annual subscription for OCR cca £40 on Mac
Pros	- Many reading features - Converts highlights to mindmaps - Export hightlights to mind maps - Create revision cards from highlights and notes - Built in text to speech - Also Mac apps

	• Cheap for category
Cons	• No freemium tier • No reflow • No Windows app

Day 5: Kobo Elipsa
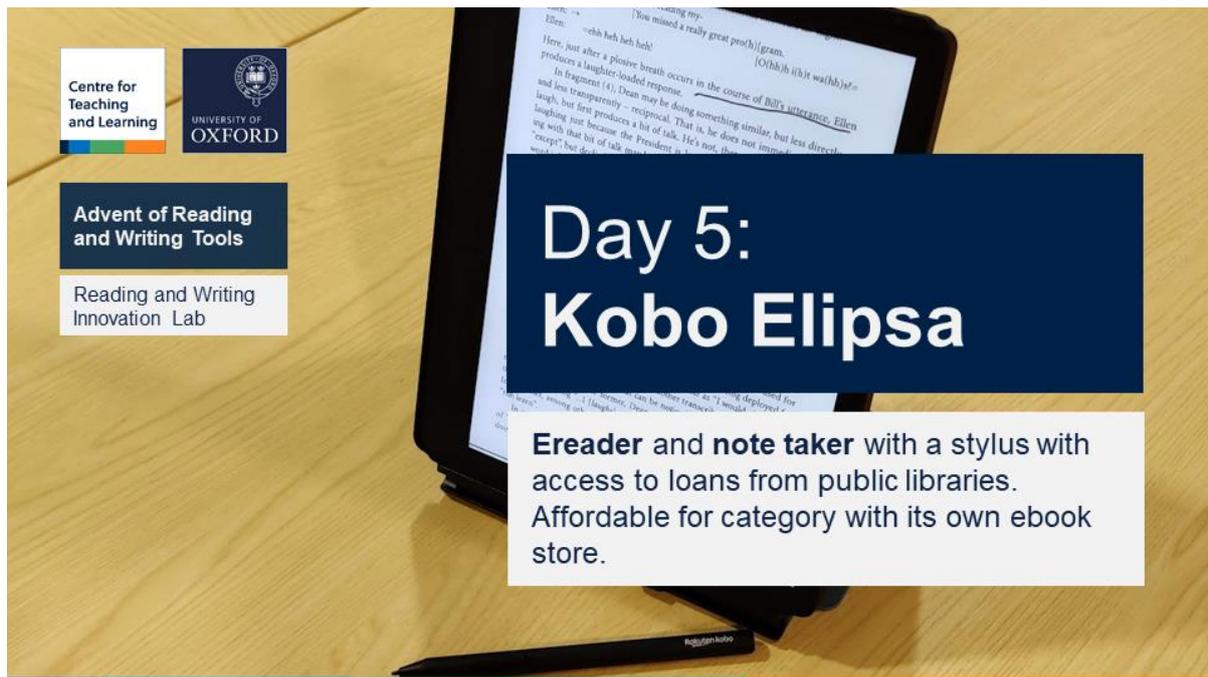
Ereader and **note taker** with a stylus and access to loans from public libraries. Affordable for category with its own ebook store.

ⓘ About

Kobo Elipsa is a large 10in e-book reader and note-taker from Amazon's biggest competitor in the e-Book space. It launched a year before Amazon's first large note-taker the Kindle Scribe and is already more advanced. It is reasonably priced within its category with deals frequently available and has a decent feature set. It comes with a cover and a good digital pen as standard.

At present, it may provide the best features to price ratio compared to the reMarkable and Kindle Scribe but it is slightly less feature rich compared to competitors such as Onyx Boox. Unlike the reMarkable and most others in this category, it has its own established ebook store (not far behind that of Amazon).

👍 Pros

The Elipsa's biggest selling point compared to the Scribe is that is support Overdrive which is the company through which most public libraries (but sadly few university libraries) acquire their ebooks. It means that anyone can register for free in their public library and get loans of ebooks (this holds for any Kobo device but also for any phone or tablet).

The screen quality is in-line with the best in the category but unlike the reMarkable it has illumination, which means it can be read in the dark. This works more like a lamp in the room rather than the lightbulb shining directly into your eyes when using a phone or tablets.

The note-taking and annotations are very cable and it is easy to sync between devices.

👎 Cons

The Kobo has no app store, so only the built in features can be used. This is no different from the reMarkable or the Kindle Scribe but it is worth noting.

The only integration with a cloud provider is Dropbox which may require setting up another cloud account for many people.

The device is plastic and reasonably light but the included case makes it very heavy and bulky.

▶ Find out more

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❂ Summary

About	**Kobo Elipsa**: eInk note taker and reader
Cost	cca £350
Pros	- Paper-like writing - Illuminated - Can borrow books from public libraries - Long battery life - Cheap for category - Case and pen included

	Cons	• No external apps
		• Limited integrations
		• Bulky case

Day 6: Calibre e-Book Management
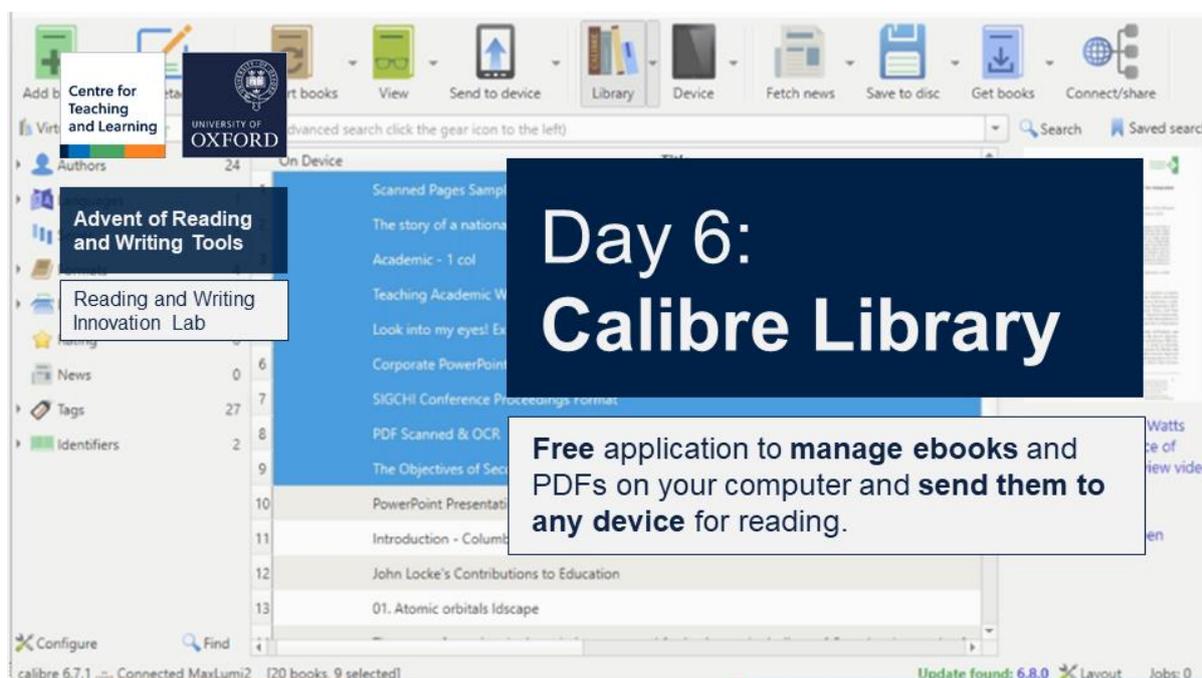
Free application to **manage ebooks** and PDFs on your computer and **send them to any device** for reading.

ⓘ About

Calibre is an essential tool for managing any number of digital ebook files in pretty much any format. It is most commonly used for storing PDFs and ePubs but its format support is impressive and will even manage Word documents.

It also has very advanced conversion features between any two formats. It is very capable of converting PDFs into ePub provided the PDF was well-formed.

Most importantly, it will let you connect any e-reader or tablet via a cable and copy ebook or PDFs files between them. You can even set it to convert to the most suitable format.

But it is also a very capable ePub reader for the desktop, so it is a good app to install, if someone sends you an ePub file and you don't know how to open it.

It is a free and open source app with frequent updates.

👍 Why should you use it

1. It's free (open source), cross-platform and easy to install. There's even a portable version for a USB key or a computer where you don't have administrator privileges.
2. It is very easy to use for basic functions – just drag your files to it, plug in a device with a USB cable and click the **Send to device** button.
3. It is compatible with a wide range of devices and ebook formats.
4. It has frequent updates so likely to work with even the latest new hardware.
5. There are many functions that you can explore and a library of external plugins to expand the functionality.

👎 Why you should hesitate

1. It is not a reference manager. So, if you already use something like Zotero, you will have to work out a workflow for moving files between them. This isn't difficult but you may look if there's a simpler way.
2. The interface can be a bit cluttered with function bloat and it looks a bit dated. This shouldn't really stop you but it is something to consider.

☑ Alternatives

There are many ebook manager applications out there – some support audio books, as well.

The most likely alternative in the academic context is a reference manager. We recommend Zotero.

▶ Find out more

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✳ Summary

About	**Calibre**: Free app for organising PDFs and sending them to devices
Cost	free, open source
Pros	- Stores PDFs and ePubs and more - Converts between formats - Built-in ebook reader - Send ebook or PDF to device

	• Manage ebooks or PDFs on device • Many management features • Rapid development • Many plugins • Easy to use • Cross-platform
Cons	• Not suitable as a reference manager • Dated interface

Day 7: Onyx Boox Lumi Max 1 and 2
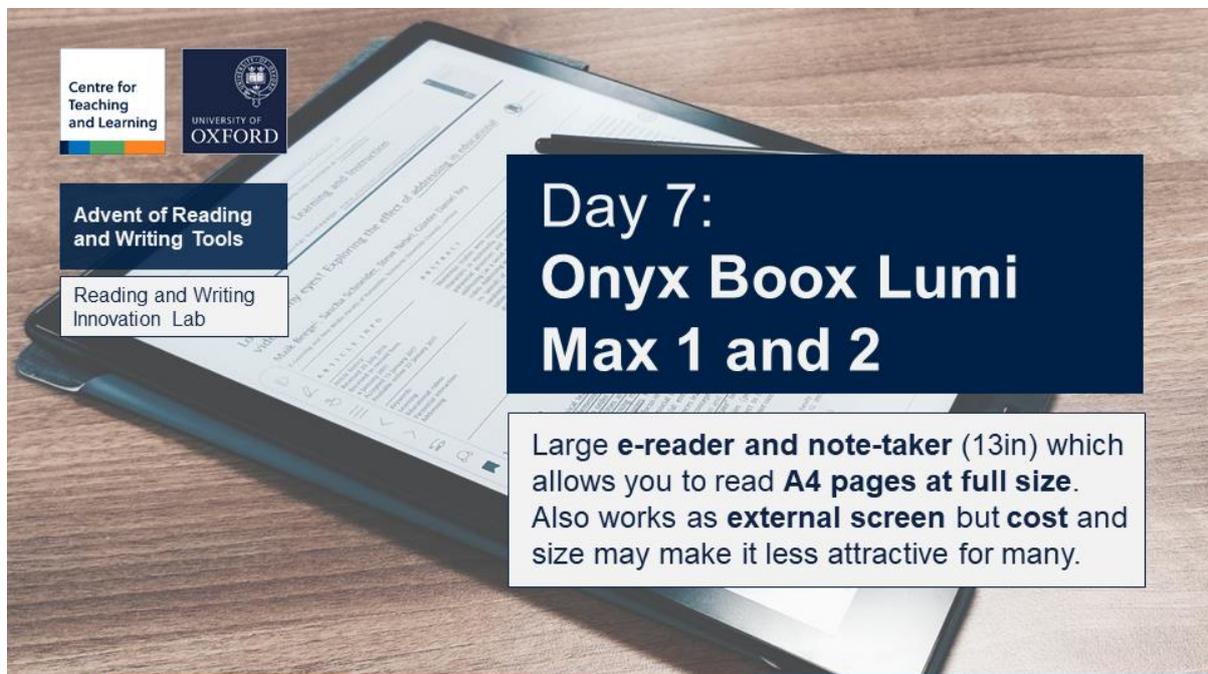
Large **e-reader and note-taker** (13in) which allows you to read **A4 pages at full size**. Also works as **external screen** but **cost** and size may make it less attractive for many.

ℹ About

Onyx Boox is one of the leading manufacturers of e-ink note takers. Their MAX Lumi series of e-readers are the best for reading full page A4 documents without scaling down. They are one of only a handful models at this size.

They offer all the same features are smaller devices in the category but their size makes them ideal. Unlike many, they are based on the Android operating system which means that it is possible to install almost any external apps – including the Kindle.

👍 Why choose this

1. The main reason to choose the MAX Lumi is the size. In terms of features, it is almost exactly the same as the smaller devices from Onyx Boox.
2. The MAX Lumi 1 also comes with a cable that makes it possible to use it as an external monitor for easier reading on the monitor.
3. The main advantage of the Onyx Boox series is the Android App store which gives
4. Another reason to choose this is that it has a built in speaker and can read out text on the screen using Text to Speech technology.
5. As the name implies, the screen is illuminated which means it can be read in the dark. But the illumination can be turned off.

👎 Possible downsides

1. The main reason not to choose this device is the cost which is about 40% more than its 10in equivalent.
2. The Lumi 1 came with a fairly basic pen but the one shipped with the Lumi 2 is much better. Both devices use the standard Wacom technology, so will work with any compatible pen.
3. There is no UK distributor, so it has to be purchased online from the Onyx Boox store.

▶ Find out more

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☑ Alternatives

There are very few other manufacturers who make large e-readers. Futjitsu Quaderno A4 is the most likely alternative.

✺ Summary

About	**Boox Max Lumi 1 and 2**: eInk note taker and reader, 13in
Cost	Cca £800
Pros	• Screen for A4 at 100% • Illuminated • Long battery life • Text to speech

	• Can serve as external monitor • Can install any Android app
Cons	• Very expensive • Included pen not best

Day 8: VoiceDream Reader
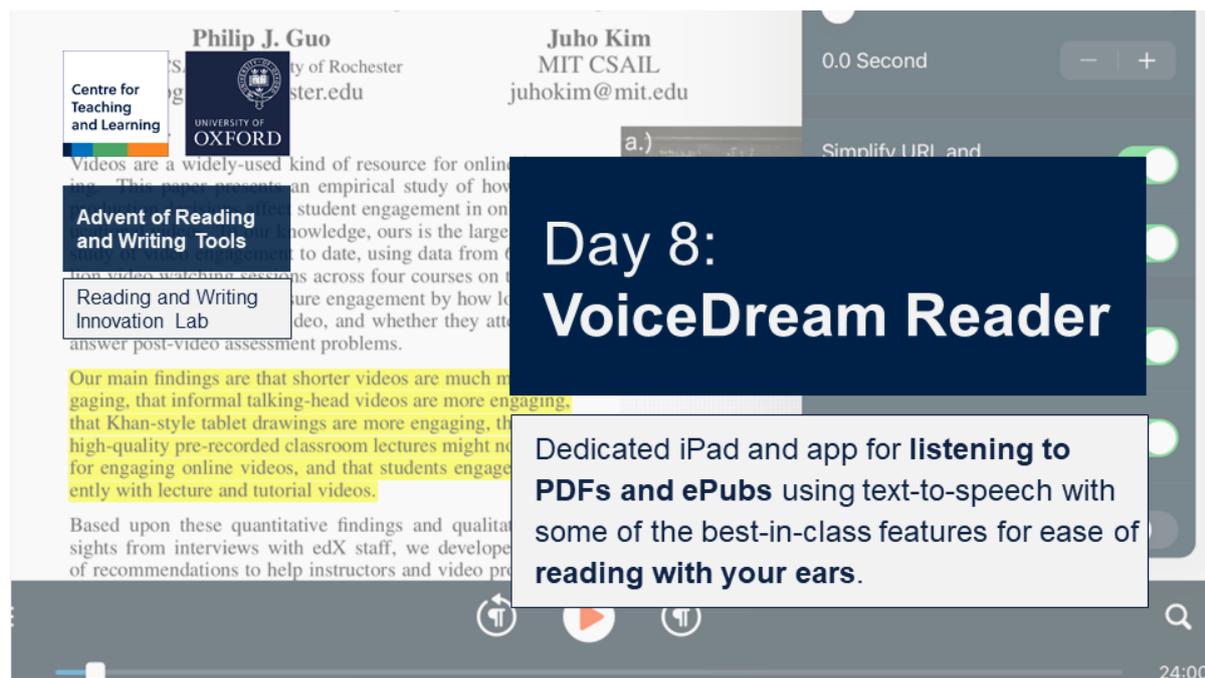
Picture

Dedicated iPad app for **listening to PDFs and ePubs** using text-to-speech with some of the best-in-class features for ease of reading with your ears.

ℹ About

Voice Dream reader was one of the first applications for the iPad to take reading via audio seriously. It has developed a lot since those days and is still one of the best for all around audio experience.

It works with PDFs and ePub documents and contains some OCR capabilities for PDFs that are not well formed – however, there are always limits to this.

It also works on the iPhone and there's a Mac version but that requires a separate payment.

👍 Strong points

It gives all possible options and settings for configuring how you want to listen. You can choose how to navigate around the document (jump by words,

sentences or even pages). You can choose different voices, modify voice speed, etc.

It even has a reading focus mode that will only show you a few lines at time while you're reading or listening.

For PDFs, it will try to do its best to crop out footers and headers which makes for a much nicer listening experience.

It will also let you display PDFs in 'text' only mode but the quality will depend on the PDF.

👎 Limitations

It offers only basic highlighting and note taking when compared to specialised applications such as MarginNote – but just as good as most default PDF readers.

The footer and header cropping cannot be customised (unlike in other apps), so you are dependent on the accuracy of autodetection.

You cannot highlight in PDF 'text mode' – this is common to all apps that offer this mode.

▶ Find out more

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☑ Alternatives

Listening to text is now built into many apps. For example, the built in PDF reader in Microsoft Edge has a Read Aloud feature.

The best app on the Android Platform for listening to PDFs and other formats is @VoiceAloud.

✸ Summary

About	**Voice Dream Reader**: Listening to ePub and PDFs
Cost	£25
Pros	• Best for listening to PDFs • Many customisation options

	•	Focus mode
	•	Text mode in PDFs
	•	Auto cropping of footers and headers
Cons	•	No custom page cropping
	•	Basic highlighting and commenting features only
	•	Text mode in PDFs variable
	•	Pricey

Day 9: Onyx Boox Mira Pro
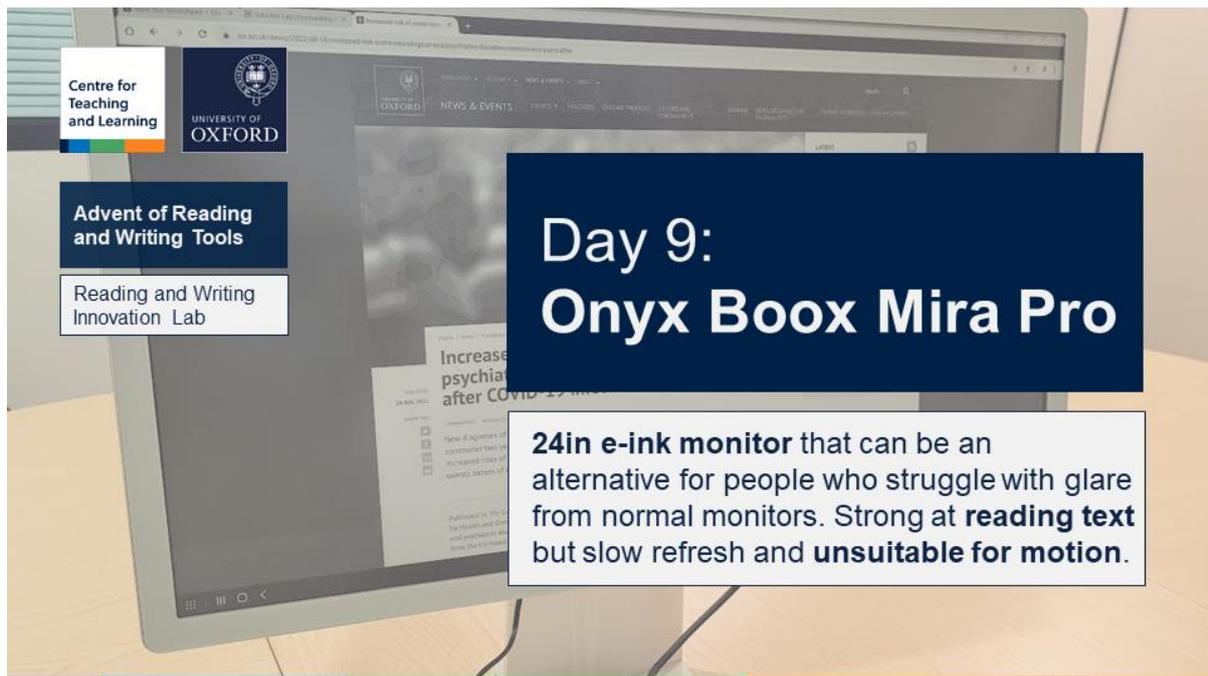
25in e-ink monitor that can be an alternative for people who struggle with glare from normal monitors. Strong at **reading text** but slow refresh and **unsuitable for motion**.

ℹ About

This is one of a very few products in a new category: large external e-ink displays. Basically, it is a Kindle but 25 inches across. It does not do anything on its own, it plugs into any computer or even a phone and serves as an additional or primary monitor.

It has all the advantages and disadvantages of an e-ink device: great to read from without glare and very slow to refresh the page. Also, it only displays things in greyscale.

The Mira Pro is a beautiful piece of engineering. It will look nice on your desk but to overcome the limitations of e-ink, you will have to switch between different modes for different purposes. This is done through a few buttons on the side and it takes a bit getting used to.

The mode that makes it easy to scroll or watch videos also leaves ghosts of previous images – which means you also have to use a button to clear up the image on the screen when you land where you were going. But then the text will be crystal clear, crisp and with no glare. You can even use it in full sun light. (But you will need a desk lamp in the dark.)

👍 Why should you get it

The is only one reason to get this screen. If you cannot read from normal monitors without adverse effects but can read from paper.

There are people who simply cannot focus, need to preserve their eyes or even suffer severe headaches when they stare a traditional screen because of the light that shines through. For them, this may be a solution.

Some people may prefer the look of text on the screen and willing to pay substantial premium.

There is one more reason to consider this device. Because it only uses power to change what's on the display, you can unplug it and whatever was there last will stay. So you may use it as really expensive black and white but portable and power-independent signage.

No matter the reason, you will have to make significant trade offs if you want to use this as your main display.

👎 What should give you pause

This is not a great primary monitor for people who want to watch videos or even browse the web a lot. It is wonderful to read text on or to type. But everything else will be a frustrating experience.

The lack of colour is the least of your problems. The constant switching between modes and the need to clear the ghosting away from the screen is definitely tiresome.

Still, many people would probably choose this device for a second screen were it not for the price which is over £1,700.

► Find out more

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☑ Alternatives

Possibly the best alternative is the Onyx Boox MAX Lumi 1 which can serve as an external display.

But if you need a large display, the Mira Pro from Onyx Boox is probably the only reasonably priced choice.

⌾ Summary

About	**Onyx Boox Mira Pro**: 24in eInk Monitor
Cost	cca £1,700
Pros	• External monitor • Multiple viewing modes • No glare
Cons	• Very expensive • Slow refresh rate • Ghosting • No touch

Day 10: Zotero
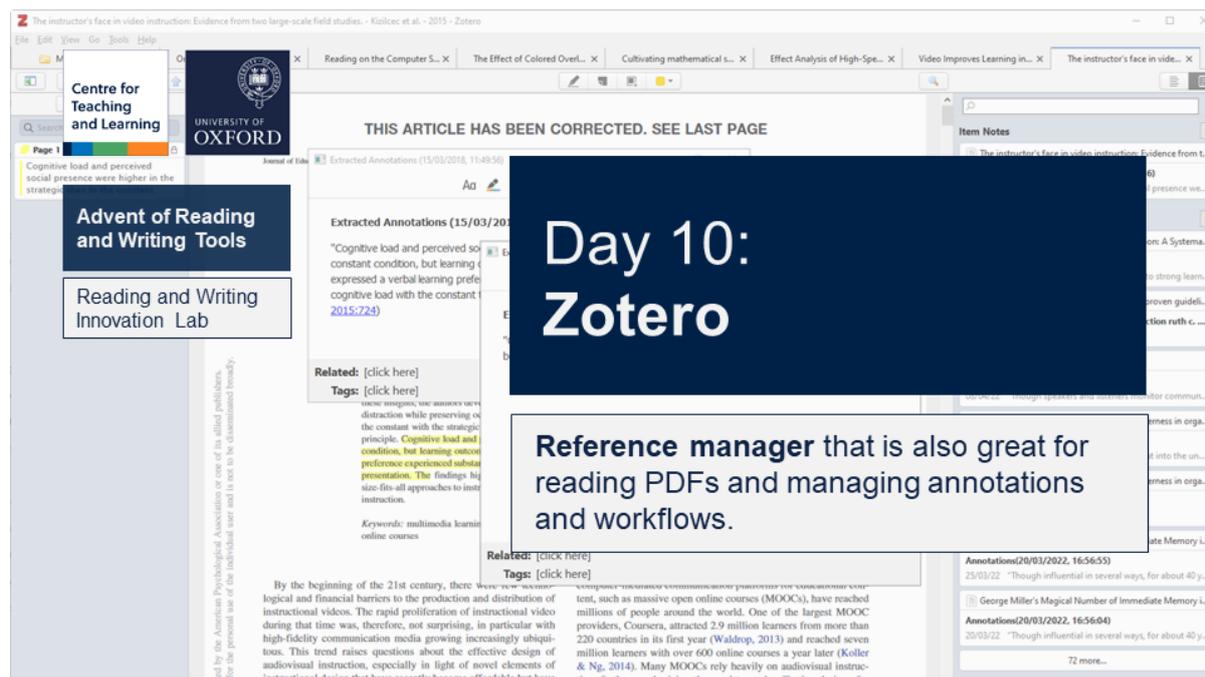
Reference manager that is also great for reading PDFs and managing annotations and workflows.

ℹ About

If you can imagine academic reading and writing without a reference manager, you shouldn't. It should literally be imaginable. There are many options and Zotero is definitely one of the best. But that is not why it should be on your Christmas academic productivity stocking stuffer list – not least because it is free.

With version 6 released in Spring 2022, Zotero has changed the game of desktop academic reading. Not only has it included a built-in PDF reader, but it also made it one of the best ones available.

And now there's also an iPad app which also has that same reader built in. It not only lets you highlight and take comments, it also lets you tag your highlights, export them into notes attached to your paper and then organise them in different ways.

The other new feature Zotero has is a much better note-taking interface. While it's not great for lecture notes, it is the ideal place to keep notes on your readings.

Zotero's integration with popular notetaking apps like Notion or Obsidian is also another plus.

👍 Why choose Zotero

With the latest release, Zotero is simply one of the best ways to read academic PDFs on the desktop and a decent one on the iPad.

In addition, it makes it easy to organise notes and highlights. Any highlight can be tagged, inserted into notes and linked to other readings.

The notes and quotes can then be directly inserted into a Word document using the Zotero plugin. This saves on cutting and pasting confusion.

Zotero is also probably the best choice for collaboration and sharing of libraries with a very good web-interface.

Because it is Open Source, it also has a fairly active plugin ecosystem and a number of public guides to learn from.

👎 Why Zotero may not be for you

The biggest downside compared to competitors is that Zotero only gives you 300MB of online storage for free. You can extend it to 2GB for $20/year or add more money for 6GB or unlimited. Storing the library in Onedrive or Dropbox is possible but you have to be careful to close Zotero before opening it elsewhere.

Compared to some others, Zotero's design looks rather dated but this should not matter to most people.

► Find out more

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☑ Alternatives

There are many alternatives to Zotero. Endnote and Mendeley are mentioned most often but there are many others. Sadly, the most frequent competitor is nothing or a Word document with a list of references. Do NOT use one of those.

✸ Summary

About	**Zotero**: Reference manager and PDF reader in one
Cost	Free
	$20-$60/year for additional online storage

Pros	• Full-featured reference manager
	• Online sharing and collab
	• Powerful organisation of highlights and notes
	• Integrated PDF reader with advanced features
	• Plugin ecosystem
	• Free and open source
	• Available on all Windows, Mac, Linux and web
	• iPad app available
Cons	• Dated design
	• Limited free online storage

Day 11: C-Pen Lingo pen
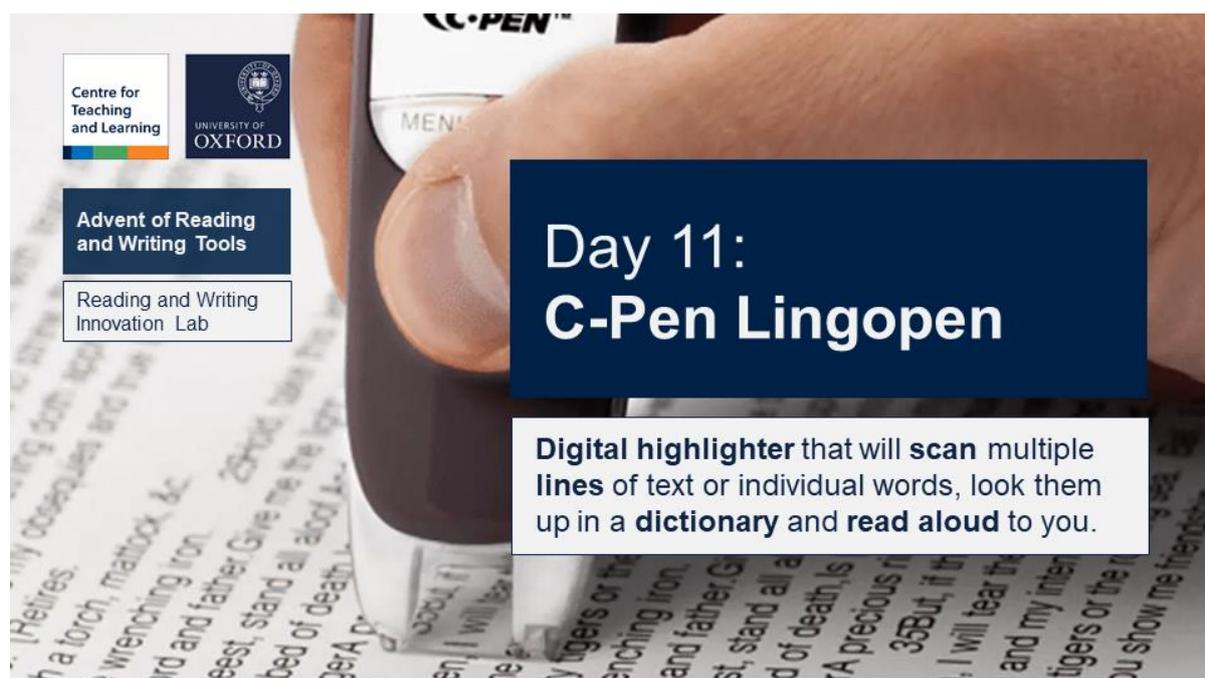
Digital highlighter that will **scan** multiple **lines** of text or individual words, look them up in a **dictionary** and **read aloud** to you.

ℹ About

The C-Pen line of products is best in its category of line scanners or digital highlighters. They are probably the most accurate stand-alone devices in terms of OCR quality. They are a great companion to people with dyslexia or poor vision who want to hear the text but they can also be useful, if you just want to save retyping highlights from printed materials.

The Lingopen has all the features of the normal readers but it adds dictionaries in 7 languages (English, French, German, Italian, Mandarin, Russian, Spanish). This makes it great to anyone who spends a lot of time in the library reading printed materials in one of these languages. Looking up words is much quicker when all you have to do is highlight one.

In addition to offering word definitions, the Lingopen reads out the text and lets you copy it to your computer via a USB cable.

👍 Why get the C-Pen Lingopen?

It is entirely standalone. You can just walk into a library with a charged C-Pen and the included headphones and start reading. It fits into your pocket and the battery should last longer than you can in one sitting.

It is easy to use and takes minutes to learn to operate it. It also does not require a lot of manual dexterity.

Even though you have to scan line by line, you can go for multiple lines and C-Pen will add the up for you.

It has some additional features such as voice recording and playback but it is hard to imagine using that even if you also have a phone handy.

👎 Why hesitate?

The C-Pens are just too expensive for most people to justify buying for themselves. You really have to need it.

You can only scan one line at a time so it will not replace the need for a scanner (but it is not intended to).

It comes included with all the cables but it uses MicroUSB rather than USB-C (even the latest versions).

The only way to get information from it, is to use the USB cable. There is no wireless way to transfer data.

▶ Find out more

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☑ Alternatives

Perhaps the best alternative to the C-Pen Lingopen is the C-Pen connect. It is cheaper, smaller and connect directly to a smartphone or tablet. But it only works if you have that other device connected. It also supports more languages through its connection to Google Translate.

The other option is your phone camera and an app that will recognise the text for you. This is always more cumbersome but some apps like VoiceDream reader will let you take a picture of the whole page and run your finger all the parts you want to have read out.

OrCam Read could be another alternative but it is almost 10 times more expensive and not significantly higher quality.

✸ Summary

About	**Cpen Lingopen**: Digital highlighter converts text to audio and copies and translates words
Cost	£250
Pros	• Stand alone • Easy to scan individual lines • High quality recognition • Text to speech • Translation support
Cons	• Only scans line by line • Connects via microUSB to copy files

Day 12: Read Aloud
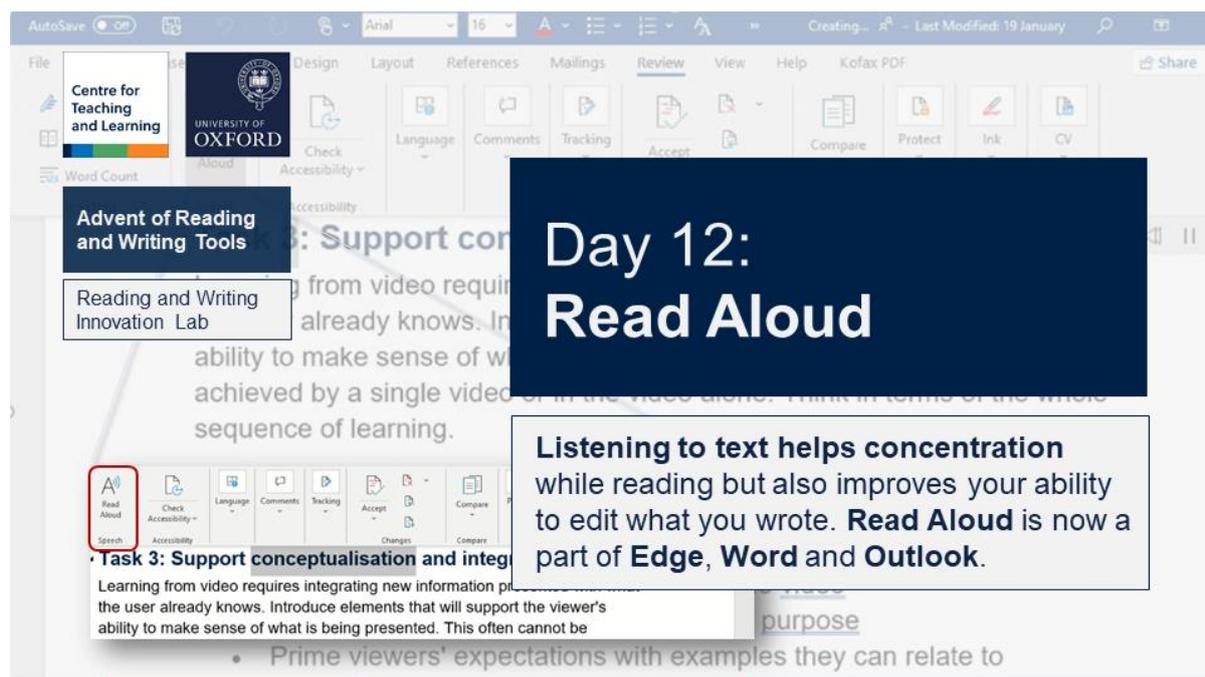
Listening to text helps concentration while reading but also improves your ability to edit what you wrote. **Read Aloud** is now a part of **Edge**, **Word** and **Outlook**.

ⓘ About

Read Aloud may seem like not that much. It is not an application or a device. It is just a feature. But it is a feature that can transform both your reading and your writing.

It is available across a number of Microsoft apps:

- Edge browser (works on PDFs as well as web-pages)
- Word
- Onenote
- Outlook

Listening to text has a number of benefits for people reading:

- Improves concentration
- Let's you rest your eyes
- Helps processing for people with learning disabilities

But listening is also a great part of any writer's toolkit. Everybody should listen to any important text while editing and Read Aloud makes it easy by being integrated directly into Outlook and Word – the two most common apps for creating text.

👍 Pros

The main reason to use Read Aloud rather than the alternatives is the high quality of the new Natural voices Microsoft developed. They are head and shoulders above others – particularly when it comes to intonation. And they are available in a number of languages and even accents.

The fact that those same voices are available for free in some of the best and most common applications for reading and writing, makes it an easy choice. It can even be used to listen to PDFs inside the Edge browser and listen on mobile devices, as well.

👎 Cons

The biggest inconvenience is that you have to be online while using the Read Aloud feature. Because of the technology involved, it cannot access the natural voices without a connection to the internet.

The other annoyance is that the interface is inconsistent across apps. It is different in Edge and Word and Outlook with the latter two being more limited in choice of voices.

Read Aloud does not have some of the best features found in dedicated listening apps so it may not be a good choice just for sitting down and listening to a long text while looking elsewhere.

▶ Find out more

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☑ Alternatives

There are many dedicated applications for listening to text. We already featured Voice Dream Reader and @Voice Aloud. There are also Speechify, CaptiVoice and many others. The Speak Screen on iOS devices is also a useful feature for many.

⊛ Summary

About	**Read Aloud** - feature in Microsoft Applications
Cost	Free in Edge, Word and Onenote
Pros	• Available right where you need it

	• High quality natural voices
	• Available in apps, web apps, and mobile apps
	• Free
Cons	• Requires online connection
	• Inconsistent interface across applications

Day 13: Ruby 10 Magnifier

Magnifier that will **enlarge** any print, change **background colours**, show a **ruler** to keep track and will even **read out** what is on the page.

ℹ About

Ruby 10 is top of the line in a series of print magnifiers for people with visual impairments. It is a magnifier but it does so much more. It will change the background and colour contrast of what's on the page and it will show a ruler that makes it easier to follow lines – because as text becomes larger it no longer fits on the screen.

The Ruby 10 comes in several versions and the most advanced (and expensive one) has OCR and text to speech. It means that it will take a picture of a page, recognise the text and will read it out to you.

The Ruby 10 runs off a rechargeable battery and comes with a carrying case. It is about the size of a laptop but much lighter.

👍 Pros

The Ruby 10 is designed to fit its target audience, it is quite bulky with large buttons which means that it is easy to grasp and operate.

Despite its size, it is very light and it looks like it would survive a few gentle knocks.

The magnification is fast and the included rulers makes reading very easy.

The text recognition is fairly accurate, and the text-to-speech is fairly easy to listen to even if it is not the top of the line.

👎 Cons

The most obvious downside is the cost which is close to £2,000. Like almost all products in this category, it is out of reach of most people without some funding support.

Despite the fairly good design, it does require some dexterity to operate. It can be quite challenging to align the camera to the text – particularly with heavy books that won't stay open.

While it is light and the size and shape are quite usable, it is only portable in the loosest sense. It is the size of a large laptop, so it is unlikely somebody would like to carry both.

▶ Find out more

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☑ Alternatives

There are many magnifiers of different size at different price points (although few under £300). The easiest way to save money is to get the Ruby 10 without voice or get the smaller version Ruby 8. Optelec and Onyx are other well-known brands.

For those who want to connect to a computer, there is the portable Pearl Camera scanner.

Of course, an iPad with a magnifier app and a stand could also serve this function. The one downside is the lack of hardware buttons.

✷ Summary

About	**Ruby 10 with speech**: Magnifier with OCR and TTS
Cost	£1800
Pros	• Portable • Gives options on accessing text in different formats • OCRs prints and converts to speech
Cons	• Requires dexterity to use • Very expensive

Day 14: Navigation Pane in Word
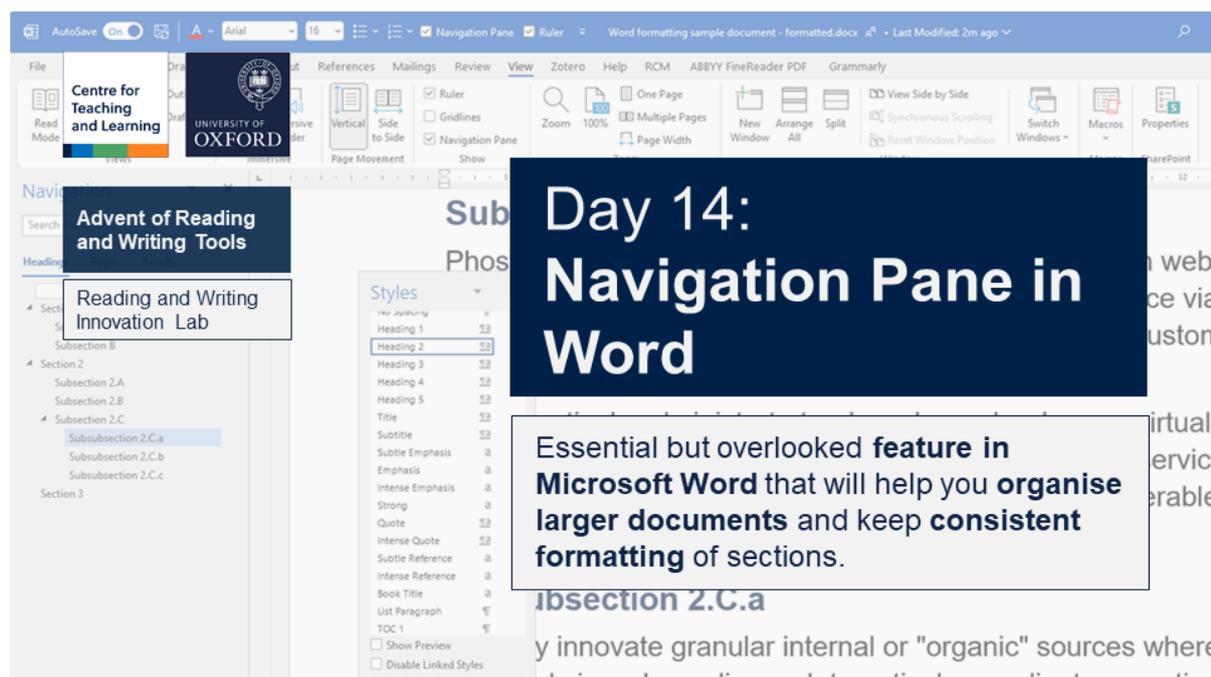
Essential but overlooked **feature in Microsoft Word** that will help you **organise larger documents** and keep **consistent formatting** of sections.

ℹ About

Managing long documents successfully is an essential part of academic writing. The Navigation pane in Word makes this much easier – yet very few people know it is there and how to make the most of it.

The Navigation pane takes all paragraphs marked with Heading styles and displays them on the side. This gives writers and document reviewers a great overview of the structure of their document. It makes it easier to plan writing but also much easier to review documents.

All that you need to do to use it is **mark the section headings** with a style Heading 1, 2, 3, … 9. It is worth learning the **keyboard shortcuts** (Ctrl-Alt-1, 2, 3 will choose heading 1-3. Alt-Shift- left/right arrow will move the heading level up and down).

A useful tip: You do not have to select the whole heading, just click anywhere in it and then chose the style you want.

But there's much more you can do with the navigation pane:

1. Drag entire sections up and down
2. Promote or demote entire sections in the document outline
3. Collapse or expand sections
4. Only show certain levels of headings
5. Select an entire section under a heading

👍 Why you should use it

Navigating a document with clearly marked sections is so much easier and puts less pressure on cognition. It may even be worth it to mark up a document with headings as you're reviewing it, even if you don't have one.

It is really easy to accidentally mix up the level at which a section is in the document outline. The Navigation pane makes it easy to fix.

Once you have marked a document with headings, you can also insert an automatic table of contents that automatically updates the pages as you edit the document.

Because Headings are marked with styles, it is easy to change the formatting of all section headings just by redefining the styles.

Documents with section headings are not only much easier to create and use, they are also **accessible**. A blind person using a screen reader will not be able to successfully navigate a document without headings. Navigation is also important for dyslexic readers who find skimming more challenging.

In short, doing this will save you hours of work with long documents but it is also worth using with shorter ones – any document over a page long.

👎 Some caveats

There are no downsides to using Heading styles and the Navigation pane.

But the full feature set described here is only available in the Windows desktop app. Mac and the Web version only allow navigation and collapsing of levels – not moving sections around or demoting/promoting them.

▶ Find out more

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☑ Alternatives

Google Docs and Libre/Open Office also have ways to display document outlines as do many other text editors.

There are some dedicated applications for managing long document projects – Scrivener being perhaps the most famous.

⊛ Summary

About	**Navigation pane** - feature in Microsoft Word

Cost	Free in Word
Pros	• Lets you manage a long document
	• Helps you keep consistent formatting
	• Makes it easy to create table of contents
	• Essential for document accessibility
Cons	• All features are only present in Word on Windows

Day 15: Kindle Fire 8in
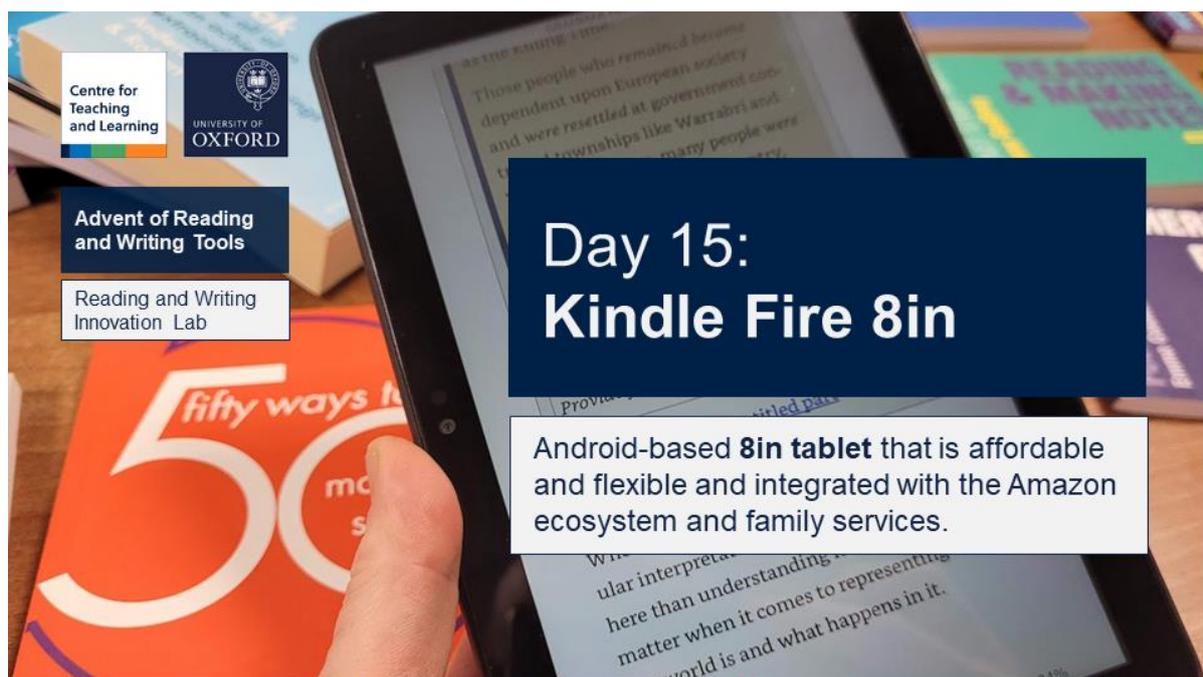
Android-based **8in tablet** that is affordable and flexible and integrated with the Amazon ecosystem and family services.

ℹ About

Amazon's Kindle Fire tablets are perhaps the most popular and affordable Android-based alternatives to the iPad. The 8in version (companion to the 10in) is similar in size to e-Ink Kindles but makes it possible to browse the web, install Android apps, watch videos and more.

👍 Reasons to get a Kindle Fire tablet

- The main reason will have to be price. For basic reading and web-browsing, it is an excellent choice.
- The price and extensive parental control option also make it a very good option for children.
- The Kindle Fire also integrates nicely with the Amazon Kindle store and is great for combining Kindle ebooks and Audible audiobooks
- It also integrates with the Alexa ecosystem and can be used as a smart speaker.

👎 Problems to be aware of

- The Android reading app ecosystem simply is not as developed as the iPad. It is enough for basic reading but all the interesting innovation is happening on the iPad.

- The Kindle Fire does not run the full Google Playstore which means not all the best apps are available. Most notably, it does not have the YouTube app. It is possible to install the Google Play store but it you need to carefully follow online instructions.
- There is not 'native' digital pen, so you have to take notes with a normal stylus simulating your finger.
- 8in screen may not be big enough – but 10in versions of the Kindle Fire are available.

▶ Find out more

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☑ Alternatives

iPad is the most obvious alternative but even the cheapest iPad costs almost 5 times as much as an 8in Kindle fire.

There are many other Android Tablet manufacturers who offer a decent experience at similar price points (Lenovo, Samsung, Asus). But the Amazon Kindle's focus on reading do make it a bit more cohesive user experience.

✸ Summary

About	**Kindle Fire 8in:** Android Tablet
Cost	£50+
Pros	• Cheap • Supports all Android apps • Integrates with Amazon book store and Audible • 10in size available
Cons	• Smaller Screen (no 13in available) • Google Apps require work around • Not as much app innovation on Android as iPad

Day 16: LiquidText
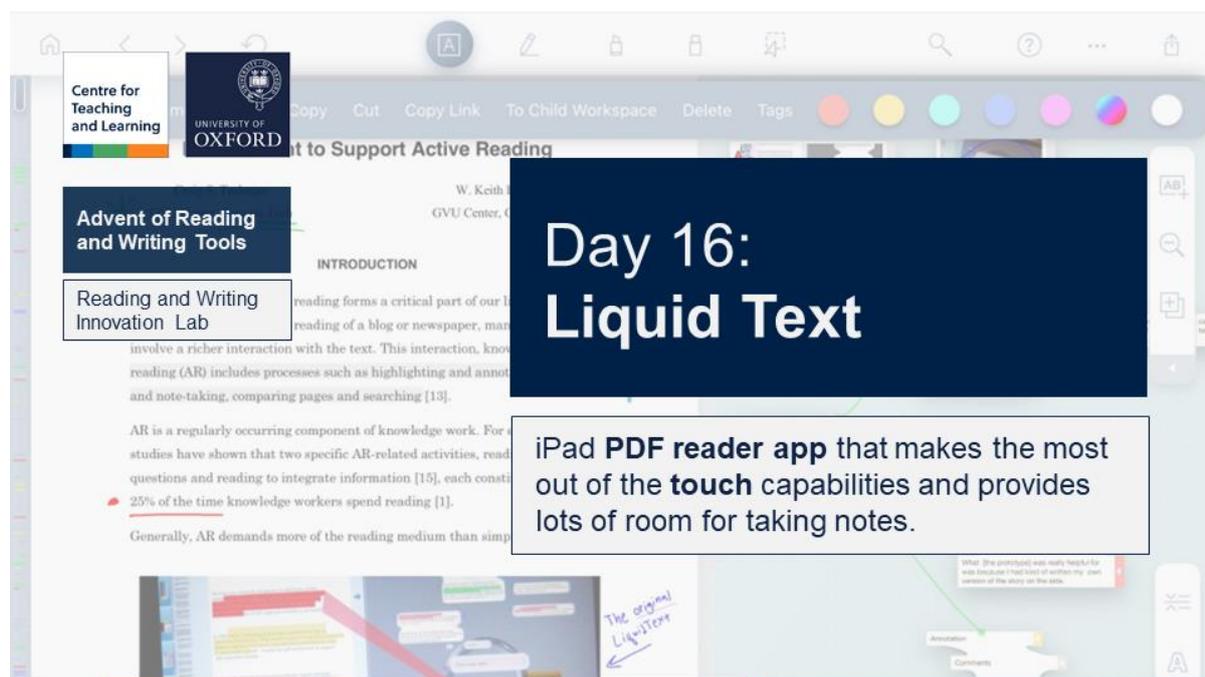
iPad **PDF reader app** that makes the most out of the **touch** capabilities and provides lots of room for taking notes.

ℹ About

LiquidText is the one PDF reader app that takes full advantage of the possibilities of iPad's touch for reading. The two standout touch features are:

1. Put one finger anywhere in the text of a PDF and scroll with your other. The first finger provides a break and the second finger brings in text. That's a really fast and natural-feeling way to jumping around the text.
2. Switch to highlight review mode and pinch the text. It will immediately bring all the highlights from across the entire PDF together.

This makes not only a great touch experience, it also makes it easier to build a mental map of the document.

The second strength of LiquidText is its touch friendly infinite canvas for note taking. You can drag any highlight from the text into the canvas, make connections between them, and add notes. All in one smooth notion.

LiquidText also has apps for Mac and Windows and it supports the Apple Pencil.

👍 Why try LiquidText

The main reason to try is the touch capabilities and smoothness of motion. LiquidText may be a good reason to get an iPad.

It is being actively developed and has now introduced integration with Zotero and Mendeley.

When working on a large project, you can combine multiple PDFs and connect them together.

It is easy to import and export PDFs into LiquidText.

Highlights can be exported in several formats.

👎 Reasons to hesitate

LiquidText has an opinionated interface. Some elements of the interface are hard to hide.

Another missing feature is the ability to create own bookmarks. While LiquidText will display them if they exist, it won't let you add your own.

Finally, LiquidText is quite pricey for an app at £25 for the iPad app alone. The Windows and Mac apps require a subscription. However, it does have a usable free tier.

▶ Find out more

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☑ Alternatives

The closes alternative to LiquidText is MarginNote which has more pure PDF organisational features and lets you export notes as mindmaps. But it lacks the touch interface of LiquidText (and also only has a Mac app with no Windows option).

✷ Summary

About	**LiquidText**: Power PDF reading and note taking app
Cost	Free + £25 or annual subscription
Pros	• Ingenious touch interface
	• Infinite note taking canvas
	• Great Apple pencil support
	• Usable free tier

	• Mac and Windows apps available
	• Export highlights into separate doc
Cons	• No custom bookmarks
	• Not as good at text to speech
	• No reflow
	• Not as good at very large documents
	• Expensive – many features part of subscription mode only

Day 17: Wacom Tablet
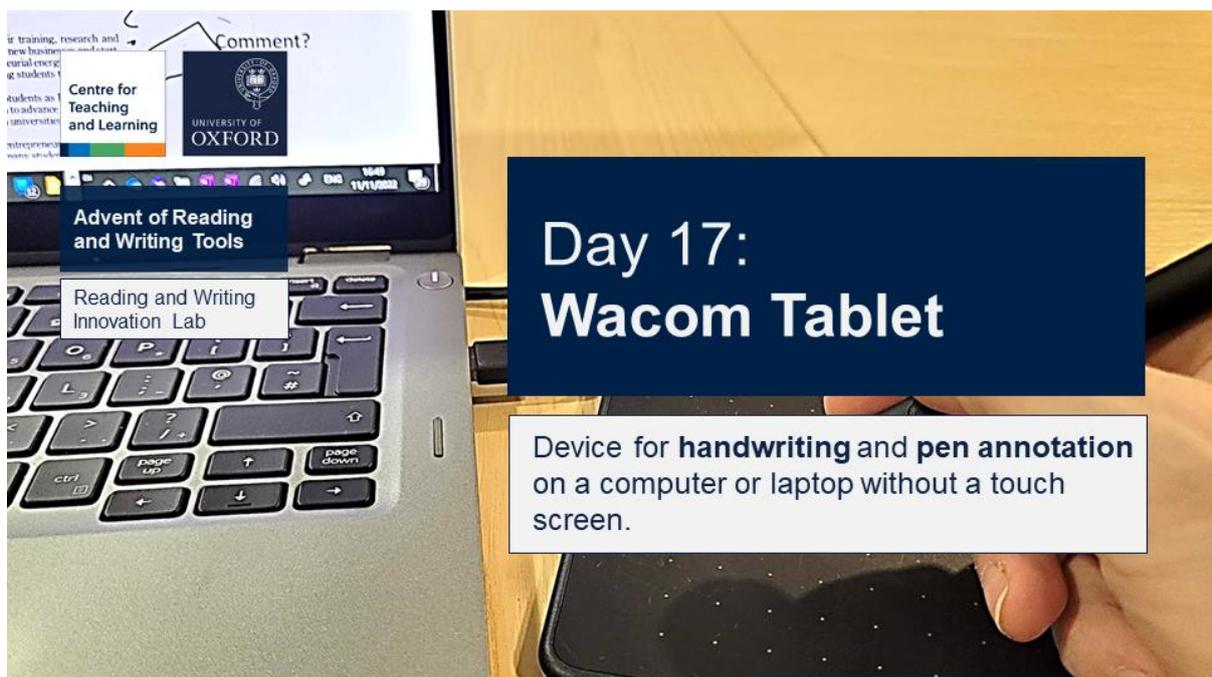
Device for **handwriting** and **pen annotation** on a computer or laptop without a touch screen.

ℹ About

The Wacom tablets are best known as devices for artists but they can also be an excellent tool for annotating documents on the desktop or taking notes but hand.

The cheapest model is relatively affordable and will suffice for basic pen functionality. You can write in Onenote, Word, on top of PowerPoint slides or using virtual whiteboards.

👍 Why get one?

- The most basic tablet is probably the most affordable way to draw and hand write on the desktop or a laptop without a touch screen.
- People with mobility issues can use the pen as an alternative to the mouse.
- They can be used with a variety of compatible pens or styluses which don't need to be charged.

👎 Cons

- Using the basic Wacom tablets without screen requires a lot of adjustment as you learn to draw or write on the desk and watch letters appear on the screen in front of you. Some people find this more natural than others. There are more expensive models that replicate the screen on the tablet itself.
- You have to install a driver and control software to use this tablet. This may result in compatibility issues. Most often people experience issues on MacOS, so make sure your models is explicitly compatible.

▶ Find out more

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☑ Alternatives

The only other alternative is a device with a touch screen. All PC manufactures make laptops that have a touch screen and for which you can purchase a digital stylus.

Other option is to connect an iPad to the PC and draw on it.

⚙ Summary

About	**Wacom tablets:** Provide pen input interface to computers
Cost	£60+
Pros	• Affordable at entry level

	• Adds touch and pen input to desktop or laptop
	• Models with screen available
Cons	• Learning curve
	• Requires USB connection
	• Less support on MacOS

Day 18: Bigme B1 Max Colour eReader
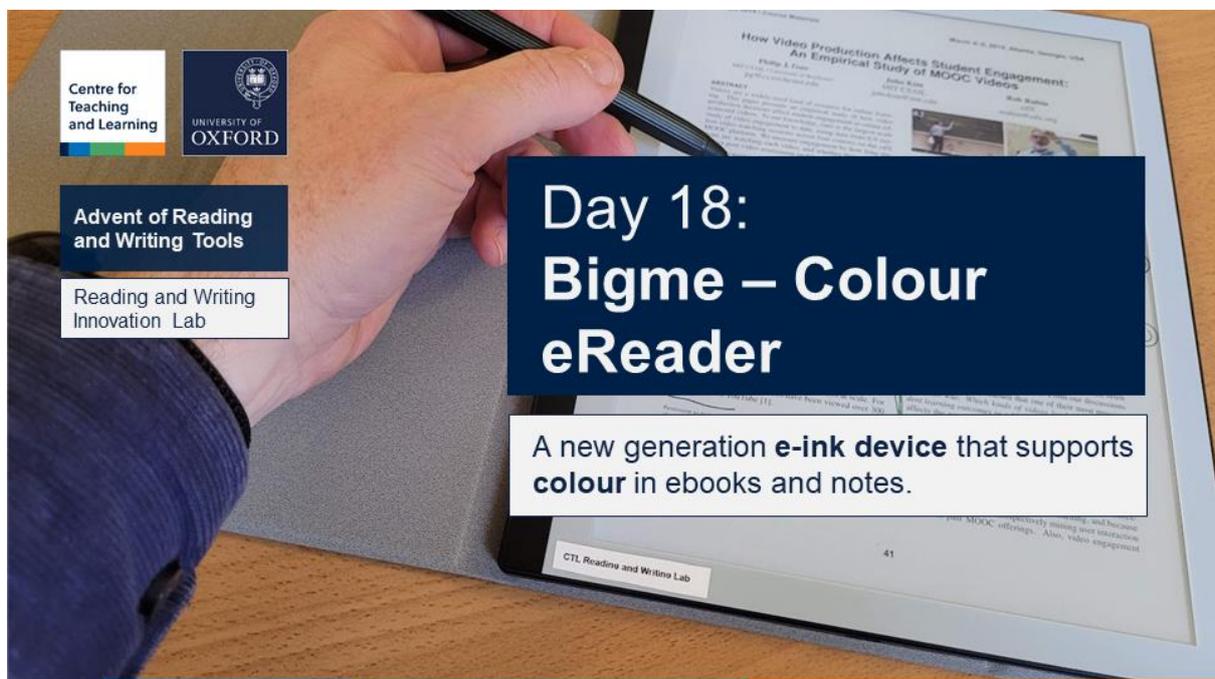
A new generation **e-ink device** that supports **colour** in ebooks and notes.

ℹ About

The Bigme B1 Max with colour is one of the first large e-readers and note takers that support colour. It will both display ebooks with colour illustration and let you use colours for annotations.

It also supports Android apps and can be used to play back audio.

👍 Reasons to consider

The main reason to consider the Bigme B1 Max Colour is its support for colour. The colour accuracy is not as good as on a laptop or a tablet screen but will display photos and drawings without obvious shortcomings.

Android and audio support are also reasons to consider. But overall, colour is the main selling point.

Like the remarkable, it also comes with its own mobile app for communicating with the e-reader.

👎 Cons

It is significantly more expensive (more than twice) than other 10in e-readers without colour – so unless you need colour, it may better to go there.

This is the first version by a Chinese manufacturer aimed at English speaking market. It is well-localised but there are a few edge cases where Chinese does appear.

It is one of the few e-readers not supported by Calibre.

▶ Find out more

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☑ Alternatives

There are no easy to obtain 10in e-ink ereaders incolour. However, there is an 8in colour e-reader the Boox Nova Air C which we also have in the lab.

✴ Summary

About	**Bigme B1 Max Colour**: eInk note taker and reader, 10in, colour
Cost	cca £850
Pros	• Colour • Competent reader • Android apps
Cons	• Expensive • Limited availability

Day 19: Styluses
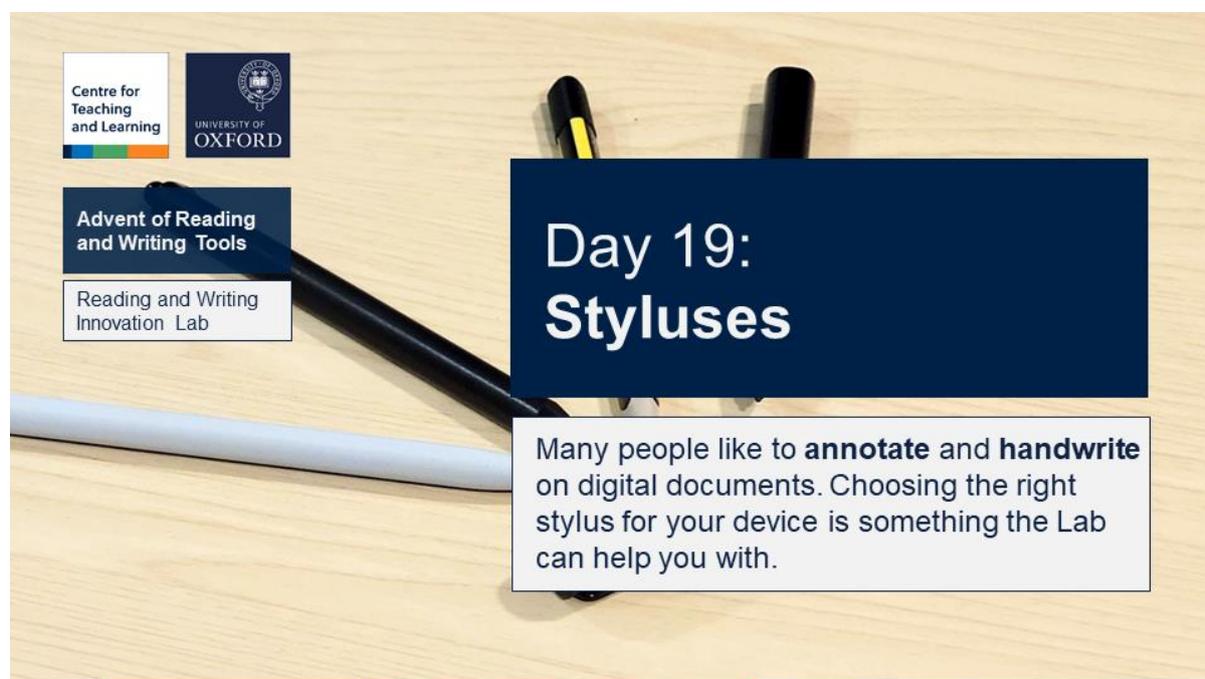
Many people like to **annotate** and **handwrite** on digital documents. Choosing the right stylus for your device is something the Lab can help you with.

ℹ About

Even in these digital times, the traditional pen or pencil hold a special place in many people's reading and writing practices. Some people prefer the physicality of pen over keyboard but paper still gives us the immediate response and freedom of placement that is more difficult with keyboard and mouse. If we want to place two notes next to each other or draw a connection between them, pen and paper is the most natural way to do it.

That's why many of the devices and apps that we featured this month try to replicate the paper experience in various ways. But it's not just the paper we need to think about but also the pen or stylus. In the lab, we have a number of styluses for people to try.

📑 Types of styluses

There are two broad types of styluses:

1. Passive
2. Active

Passive

Passive styluses essentially just replicate the capacitive features of the finger – this means that they **work on any screen** that can be controlled by finger.

Another two **advantages** are that they do not need to be charged and are very cheap. Some even combine a traditional pen with a stylus.

But they also have some **disadvantages** because the software of the device does not know that you are using a stylus and not a finger. Which means that:

1. Palm rejection may not work reliably if you rest your wrist on the surface.
2. There is no pressure sensitivity – meaning that if you push harder, the line does not get thicker.
3. Some other features offered in software to active pen users will not be available.

The passive styluses are also a bit thicker, so they do not make fine control easy. We have three passive styluses to try:

1. Traditional with a thick rubber tip
2. Thin tip on a translucent plastic disk that gives a surprisingly good experience
3. Pencil tip with electric signal that requires charging to simulate the capacitive response of a finger

Active

Active styluses give many more options for use but they are very much device specific. There are again two broad types:

1. Bluetooth
2. EMR (Wacom)

Bluetooth styluses

These styluses must establish a connection to the device using Bluetooth. This makes them the least flexible and most device specific. They also offer the most features.

There are basically two systems. iPad and Windows touch screen.

iPad styluses

There are very few options to try on an iPad:

1. iPad Pencil (1 and 2):
   a. 1 version is compatible with earlier iPads Pros and the introductory level iPad – is charged via lightning port
   b. 2 is compatible with latest iPad Pros and Airs and charged via magnetic connection

2. Logitech Crayon: Compatible with most iPad devices that support pencil. Cheaper but has fewer features.

Windows styluses

Windows 10 and 11 have built-in pen support of which a number of applications (Word, Onenote, Whiteboard) can take good advantage.

Most manufacturers of laptops with a touch screen also offer a stylus. These are most often powered by a AAA battery.

The best example we have to try is the Microsoft Pen which also has a clever eraser on top which can be used to erase drawing but also to control PowerPoint presentations.

EMR (Wacom)

The last type of stylus is associated with Wacom (the manufacturer of drawing tablets). They work via electromagnetic resonance which interacts with a sensor layer behind the screen. This means that they are compatible with any device with such a layer, do not need a Bluetooth connection and do not need to be charged.

This technology is available on most e-readers and some laptops, as well. These styluses are cheaper than Bluetooth options and can be used between all the e-readers. Apart from the styluses shipped with their devices, we also have styluses from two traditional pen makers:

1. LAMY Al-Star
2. Staedtler Noris Digital Pencil

▶ Find out more

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Day 20: Immersive Reader

An essential feature for **more focused reading** of web pages and documents or notes – a part of Edge, Word, and Onenote.

ⓘ About

Immersive Reader is another feature in Microsoft Applications that is getting its own spotlight as a reading productivity tool. It does several things to webpages and documents at once that make reading easier:

1. Remove distractions
2. Increase size of font (and also spacing between letters)
3. Reduce the length of lines
4. Change text and background colours
5. Focus on just the lines you are reading

All of the above are known to increase reading speed for everyone but are particularly useful for people with decoding difficulties and poor sight. So whether you use Immersive Reader or not, you should definitely think about doing some if not all of these things when you read.

Particularly in combination with 'Read Aloud' and 'Navigation Pane' featured on Days 12 and 14, you can greatly improve how you read and write documents. **Note:** Immersive Reader has Read Aloud built in.

Immersive Reader has three additional features that are particularly useful to people with dyslexia or those reading in a second language:

1. Syllable division (works in most languages)

2. Part of speech identification (colours and labels – works in many languages)

Immersive Reader is a feature available in:

1. Microsoft Edge (works for any webpage or selected text)
2. Word (works on any documents even PDFs opened in Word)
3. Onenote

👍 Why you should definitely use Immersive Reader

1. It is free. Not so long ago any one of these features would have required expensive payments. Now, you don't even have to install anything.
2. It works across many of the main applications where people do reading and writing.
3. It is genuinely helpful whether you have a disability or are already a productive reader or somewhere in between.

👎 Things to be aware of before you start

1. Microsoft has been great at producing free productivity and accessibility features but absolutely hopeless at consistency. Immersive Reader has different interface in Word and Onenote from that on Edge (which is better). Even within the Edge version how to close the Immersive Reader is inconsistent (have to click the icon again).
2. The Edge version does not work in PDFs opened in Edge. You have to open them in Word which produces inconsistent results.
3. When you open a webpage in Immersive Reader, you cannot use another highlighting tool (like Hypothes.is) at the same time.
4. It does not create navigation of outlines for longer pages with many headings (except for Wikipedia pages).

▶ Find out more

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You can also find out more about Immersive Reader and other assistive apps in the guide on Tools and Strategies for Productive Reading and Writing [PDF] (ox.ac.uk)

☑ Alternatives

There are quite a few browser extensions that replicate the basic distraction removal of Immersive Reader.

Of those, ReaderMode.io is perhaps the most full featured – it also creates outlines of longer pages which is the biggest missing feature in Immersive Reader. Its premium feature will also let you synchronise highlights.

ReadWise Reader which was only just released into public beta has the most potential to serve as full blown alternative for web reading. It not only transforms webpages but also saves them for later reading and lets you organise annotations. It has both mobile apps and powerful web-based reader. It is free during beta but will require payment. It will also read PDFs but will not transform them.

✴ Summary

About	**Immersive Reader**: Readability feature in Microsoft Edge, Word and Onenote
Cost	Free
Pros	• Free • Available across main apps • Greatly improves reading ease and speed
Cons	• Inconsistent interface • Does not work on PDFs • Does not support navigation in longer documents (except Wikipedia)

Day 21: Onenote
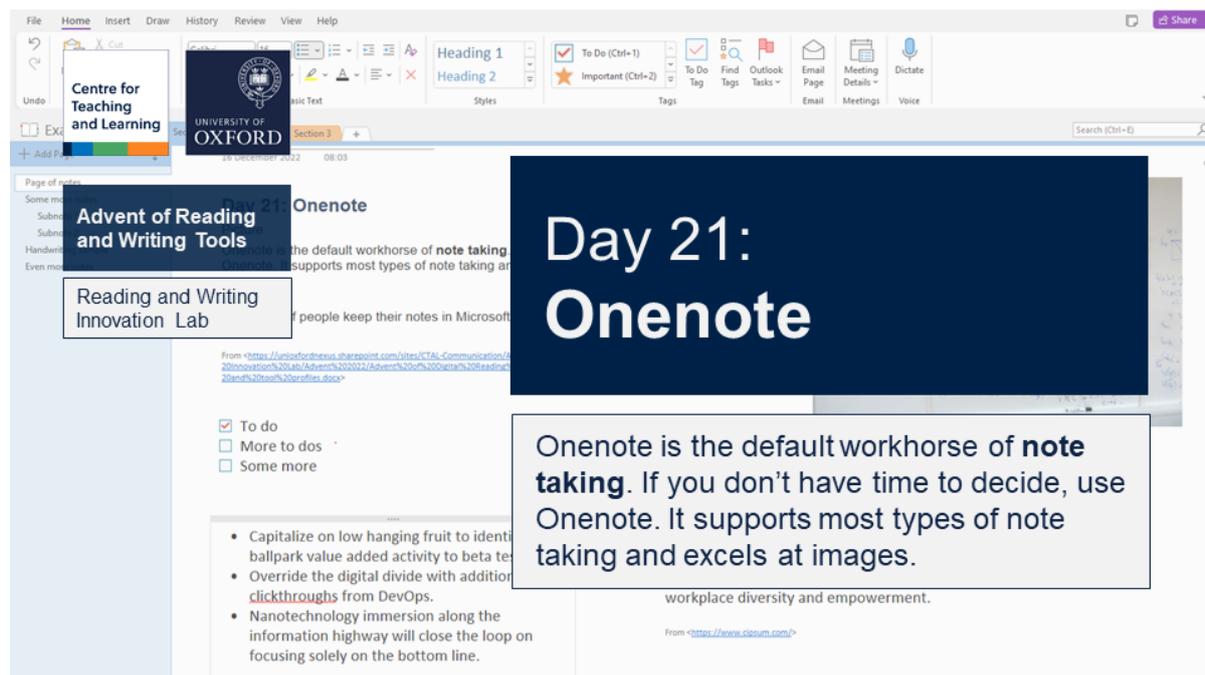
Onenote is the default workhorse of **note taking**. If you don't have time to decide, use Onenote. It supports most types of note taking and excels at images.

✍️ About note taking

Over 50% of people keep their notes in Microsoft Word or Google Docs. This is wrong. These are apps for writing but not for keeping, organising, and, most importantly, finding notes later.

You should take notes in a dedicated **note taking application** that will:

- automatically save anything you write,
- keep all your notes in one big file,
- let you organise and interlink notes,
- sync notes between devices
- search across all your notes
- share and collaborate on notes
- combine pictures and text

Keeping notes on reading and for writing is one of the things the Reading and Writing Lab is interested in surveying. Recently there has been a lot of innovation in the note taking space and there are many interesting and powerful applications to choose from. They all have different strengths and weaknesses.

Over the next three days we will feature three prominent note taking applications that would be a good choice for any one who keeps notes in Word.

1. Onenote
2. Notion
3. Obsidian

ℹ About Onenote

Onenote is one of the oldest note taking apps currently on the market. It is a good first choice for anyone who does not want to spend a lot of time trying different things. It has most of the important features and is easiest to use. It is free and available on most platforms. It is made by Microsoft who seems committed to supporting and improving it into the future.

However, Onenote is not the best choice for every task or every person. But it can find its place in most people's note taking toolkit at least in certain situations.

👍 Features to use in Onenote

Onenote has so many interesting and useful features that it will be impossible to list them all. Here the most important categories:

Organising and finding notes

Onenote keeps all notes in Notebooks. You can have as many of them as you like. Each Notebook can be organized in four levels:

1. Collections of Sections
2. Sections
3. Note pages
4. Note sub pages

You can search across all notes and notebooks.

The notebooks are stored in Onedrive and synced across all your devices (including smart phone or tablet).

Entering data

This is one of the strongest points of Onenote. Apart from simply typing in notes, it is possible to enter data in other useful ways:

1. Through a browser extension to enter any webpage
2. Through integration with Outlook (for instance to integrate meeting notes)
3. By inserting a file (for instance, a PDF which can be either attached or 'printed out' which inserts individual pages for later annotation)
4. By taking a picture on a mobile phone which is automatically synced to the notebook. This has multiple modes – including text and whiteboard which is particularly useful for taking pictures of slides during lectures.

Making notes

Notes in Onenote are stored in Pages. Each page represents an infinite canvas on which you can place bits of text next to each other or combine them with images or even audio.

Onenote even supports pen input both on the desktop and tablet or smartphone version. It is a very capable handwriting app that can easily combine different modalities.

👎 What is missing or could be improved

Collaboration and sharing

Collaborating on notes and sharing notes is one of the weakest aspects of Onenote.

Unlike many other apps like Evernote (or Notion which is coming up), it is impossible to share just a single page. You have to share an entire notebook. This limits your options greatly.

Also, there is no easy way to assign tasks to people and share authorship. What's worse, there's no easy to way to consistently track changes.

Tagging

One of the things that can be inserted into any note page is a tag. There are some pre-built tags and you can make a limited number of your own.

The three most useful pre-built tags are to do, question, priority.

It is possible to then search for tags across multiple notes. For example, you can search for all to dos marked in any note.

But making custom tags is really cumbersome and you can only have a limited number. Most importantly, tags cannot be assigned to pages, only parts of pages.

Lists

The shortcomings of the organizational system of Onenote become readily apparent the more pages we collect. Onenote has no way of organising long lists of data entries and only limited sorting options. The pages can be sorted by name or date but they have no useful metadata. There are no filters.

Over the course of research and study, people accumulate thousands of notes, Onenote makes this really difficult to manage and is not as great a tool for researchers who collect a lot of data.

However, Onenote is still a great companion for lectures, classes and conferences, so it still has a place in the academic context.

Interface inconsistencies

Microsoft (in typical fashion) has made an even worse mess of Onenote interface than usual. There is a classical app and a more modern Windows 10 app. They both look completely different. The classical app uses tabs for sections and the modern uses the more intuitive vertical list on the left.

But they do not have the same features so you still have to use both if you want to make the most out of what Onenote has to offer.

Microsoft have been working on a unified app for years and promise to make it available soon.

▶ Find out more

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☑ Alternatives

Notion and Obsidian are the other note taking apps we will consider but they are not direct alternatives – rather alternative approaches to note taking.

The most obvious directly comparable alternative to Onenote is Evernote which however is not free and does not has as good support for pen input and images.

Joplin notes is the free and open source alternative to Onenote. It does have better tagging and multimedia support but not as sophisticated multimedia feature set or developed mobile apps. It also supports the publishing of pages but this feature along with cloud synchronisation is not free and requires subscription.

GoodNotes or Notability are the two famous alternatives for pen input on the iPad.

Apple Notes is also gaining popularity with people who are fully committed to the Apple ecosystem.

✳ Summary

About	**Onenote**: Flexible cross-platform note taking application from Microsoft
Cost	Free

Pros	• Free
	• Available across all platforms
	• Supports multimedia and multiple modes of entry
	• Searches across notebooks
	• Syncs across devices
Cons	• Apps with inconsistent interface and feature set
	• Limited ways of organising long lists of notes
	• Limited sharing and collaboration

Day 22: Notion

Notion is a **note taking**, **project management** and **database development** all-in-one tool. Advanced collaboration features and an engaged, supportive community make it great tool for **academic productivity**.

ⓘ About

Notion is pretty much the polar opposite of Onenote. Where Onenote is the reliable classic workhorse, Notion is the upstart superstar. The strengths and weaknesses of Onenote and Notion are also almost a mirror image of each other.

Notion is a complete web-based productivity application that supports everything from note taking, project management, database prototyping and web page publishing.

It is even hard to simply think of Notion as a purely note taking application it is so much more. Many people switch to Notion from productivity apps like Trello or Asana, some people recommend it even for academic writing and yet others make it their main web-publishing platform.

Out of the box, Notion does relatively little. Its main strength is as a platform that can be perfectly customized to an individual's or a team's needs. But it does require an initial investment and commitment.

Notion has an incredibly passionate and supportive online community. There are many integrations and supportive tools that make it more useful. But what's even more useful is the number of templates and detailed usage guides for all types of users.

Notion is also well-known for releasing roughly monthly updates often with significant improvements.

👍 Why choose Notion and how to make the most of it

Databases

By default Notion lets you create pages with content but if you are not keeping them in a database, you might as well be using Onenote.

But Notion databases are not complicated to create or maintain. They are as easy to create as Excel tables but extremely more powerful.

This is what makes Notion databases special:

1. The key entry in the database is a page that can have as much content as you like (including another embedded database)
2. Each page in the database can have as many meta data fields as you like – these include text, dates, formulas and relations to other databases
3. You can update the database structure on the fly as your needs change and grow – just add more meta data fields.
4. Each database can have a large number of views – tables, lists, galleries, calendars, timelines, and even Kanban boards – each of these views can be used to manage the database.
5. The views come with powerful and flexible filters and sorting options.
6. You can embed the Views in pages – even in pages inside other databases. One page can have multiple views from different or the same database – which makes it easy to create useful dashboards.

7. Databases can be exported into CSV and you can import data into them from CSV.
8. You can even create a database simply by pasting a table from Word or Excel into a Notion page.
9. Databases can, of course, be interlinked with each other – but unlike traditional databases, this can be at any point and you can change it later – no extensive database planning is required.

Any one database or even an individual page can be shared with individuals or published to the web. You can see an example of this on Edutools.fyi.

But the most important thing about these databases is that they are blazingly fast. Working with them is as fast as working with an Excel table.

Pages and blocks

While the databases are the key organising mode of all information in Notion. You can even just use the meta data fields to store useful information. But the real note taking takes place in pages. The pages do not even have to live inside a database (even if they should).

Any bit of content in a page is inside a block. A block can be any chunk of content:

- a paragraph,
- to do list item
- an image or an embedded YouTube video
- even an embedded database.

Here the sorts of things you can do with a block:

- Link to it
- Transform it into another kind of block
- Position it side by side with another block into columns
- Collapse it
- Move it to a different page
- Convert it to a page
- Move it into a database where it becomes a page

You can of course just type your notes as if you were writing on a page. Every time you hit an enter a new paragraph starts (which is its own block), so Notion can be used for drafts.

The writing experience is made more interesting by the speed with which you can link in to another page inside notion or even create a reminder or assign it to someone.

Collaboration and project management

Notion is the obvious candidate if you want to collaborate on a project. You can share any page or a database with multiple people. You can give them different permissions and assign tasks for them.

You can collaborate on a single page but this works best if you create one or more interlinked databases. A single database of tasks can be displayed as a calendar or a Kanban board and you can change dates or assign tasks simply by moving them around in different views.

All of this collaboration is supported by excellent version history that lets you undo almost any change – including changes to the structure of a database.

Sharing and publishing

Anything that can be shared with individuals in Notion can also be shared with the world. You simply decide which item to share and what the world can do with it. This can be a page or an entire database. You will then get a link you can share or even make it discoverable by Google.

All of that for free (or a small payment for larger projects). You can even use third party services to display the Notion page or pages behind your own URL. (Note: these pages are not fully screen-reader accessible).

Templates

As you share your pages or databases, you have another option allow others to copy them into their own Notion workspace and modify them to their needs.

This means that you can create templates for others to use – and this is where the Notion user community makes up for any onboarding difficulties – there are large number of database and page templates for almost any use you can imagine.

Most of these community Templates are free but some are so elaborate that they almost count as their own applications – these often require payment.

Integrations

Notion has a public API and can now integrate with any other data source. Two most relevant integrations for academic reading are:

1. Readwise.io (tool or organising highlights from different sources)
2. Zotero (reference manager)

Data entry

Entering data into Notion can be done manually but there are three ways in which it can be automated:

1. Integration with a third party source

2. Import from CSV
3. Via a browser extension

The browser extension makes it great for collecting web-resources for a project. But instead of the one provided by Notion, you should use the free Save to Notion which has many more features and can let you collect and annotate rich data into any Notion database.

Pricing

Notion is free for basic users – and most users are happy with the free account. Students and academics with .edu and .ac.uk emails can even access the higher tier.

The main paid feature is Teams support – all the collaboration described above can be done on the free plan. But if you want to share entire workspaces, you have to pay for each Team member.

👎 What may give you pause

Despite appearances, Notion is not best for everything or everyone. Here are some limitations.

Making notes

Notion pages are powerful but they do not provide the sort of infinite canvas experience of Onenote. The note taking experience is much more linear which may be limiting during lectures.

Notion is great for storing and organising complex data but less good for making quick throwaway notes.

Multimedia

But Notion's weakest link is support for multimedia. You can insert and store images, video or audio – but you cannot directly record into Notion. Also, you cannot do anything directly with images such as annotate them.

Of course, there's no support for pen input at all.

Offline access

Notion is ultimately an online tool. It has good desktop and mobile apps but they are primarily for interacting with online content. They do cache a number of items offline and they will let you create new items offline.

This means that when you're offline, you only have access to your most recent pages and not your entire data set. This is different from Onenote or Obsidian.

Accessibility

One of the unfortunate side effects of the speed of development of Notion is that it is not full screen-reader accessible. This is particularly true of pages when published to the web. The basic text can be discovered but any of the visual structure (like headings or table headers) is hidden from the screen reader.

▶ Find out more

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☑ Alternatives

Notion has not true one-to-one alternative. The two closest competitors in terms of features are Clickup and Coda.io. They both offer some things that Notion does not but (while not obscure) lack the vibrant ecosystem.

Some people also choose Airtable which is a more traditional online database with much of the flexibility of Notion but many more pure-database features. However, it is not meant for note taking.

And, of course, Obsidian or Logseq are the other two alternatives with a completely different philosophy, about which more tomorrow.

❋ Summary

About	**Notion**: Freemium online note taking, data and project management tool
Cost	Free
Pros	• Free for key features • Powerful data management with databases • Fast and flexible • Collaboration and templates • Web publishing
Cons	• No handwriting support • No multimedia annotation

- More linear note-taking experience

- Limited accessibility

Day 23: Obsidian
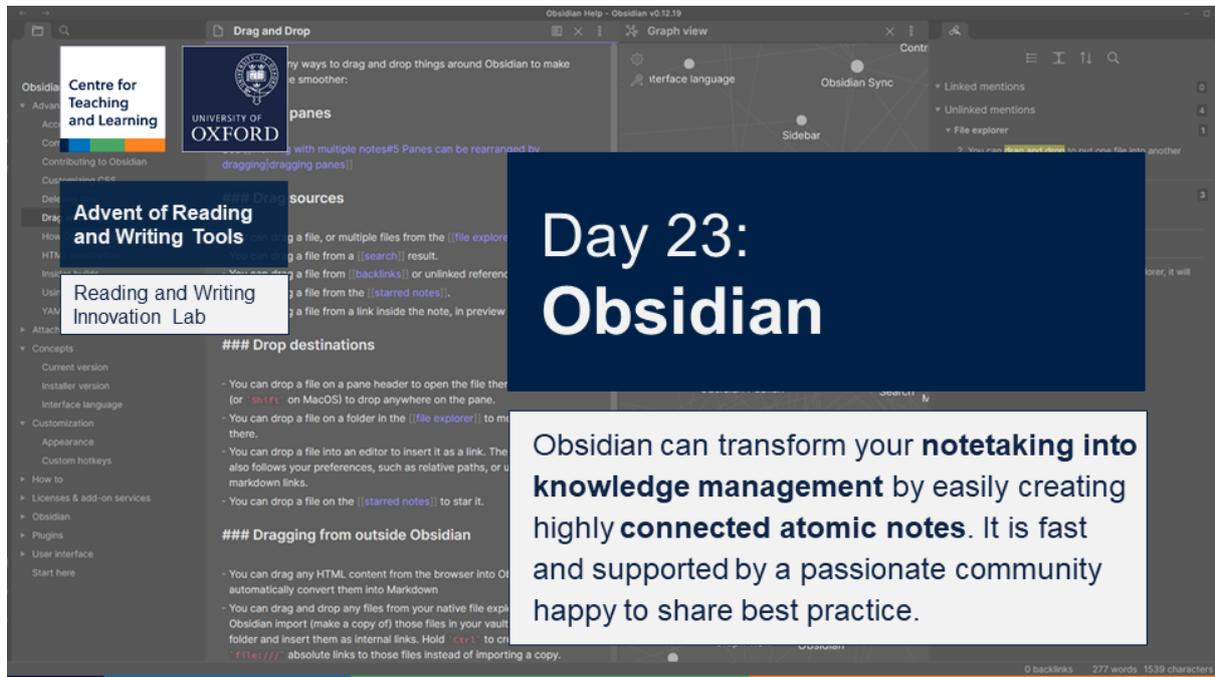
Obsidian can transform your **notetaking into knowledge management** by easily creating highly **connected atomic notes**. It is fast, stores files locally and is supported by a passionate community happy to share best practice.

ⓘ About

Compared to Notion and Onenote, Obsidian takes a completely different approach. Where Onenote is strong at multimedia and Notion and data storage and organisation along with project management, Obsidian's main goal is knowledge management. It is built to support the philosophy of 'building a second brain'. It is particularly popular with people who like atomic notetaking or Zettlekasten.

The idea of Obsidian is that notes are meant to be interconnected and that these interconnections can be used to discover relationships that may not otherwise be obvious. Obsidian is more valuable to more notes you store in it.

Similarly to Notion, Obsidian is popular because of its power and ease with which it can organise knowledge. But simply installing it may not be enough to figure out how to do much with it without consulting some guidance.

Luckily just like Notion, Obsidian has a very passionate community of users across a number of fields who have created guidance documents and videos at all levels.

👍 Why choose Obsidian

Data storage philosophy

Where Onenote stores all data in proprietary notebook files and Notion in a flexible database, Obsidian takes a completely different approach.

All Obsidian notes are stored in individual text files in folders of your machine. All the mark up making up the connections is simply part of the text that Obsidian can read.

Obsidian can also store image files and these are simply files on the disk that are referenced in the Note files.

This has many advantages and one disadvantage. The **key advantages** are:

1. All the files and your notes are in a maximally compatible format
2. The note files can be opened in any other application that can open text files – including Word or competing solutions such as Logseq
3. All the notes are on your private machine (and you can decide whether to synch them via a cloud storage such as Onedrive or Dropbox)

The **biggest disadvantage** of this approach is that the files cannot directly contain rich formatting such as bold, italics, bullets or tables. This has to be inserted using a simple mark up system called Markdown. For example, **bold** is marked with two asterisks like so: **bold**. Obsidian and many other applications can then display this in the target format.

Links and tags

One of the strong points of Obsidian is the speed and ease with which you can create connections between notes and even parts of notes.

This is possible through:

1. Links between files
2. Tags

To **create a link**, simply start typing [[and a list of note files to link to appears. You can also type in a new name to create a note for later.

To **create a tag** simply type # and then the tag name – existing tags appear in a list or you can create a new one.

All of these links and tags are clickable and make it easy to follow related ideas.

Visualisations

The utility of Obsidian's connectivity is magnified by its most distinctive feature called **Graph view**.

The Graph view displays all connections in a galaxy of interconnected and labelled items. This can look very overwhelming when there are thousands of notes but the graph view has powerful filtering options.

Obsidian recently introduced a new feature call **Canvas** that makes it possible to create custom visual connections between notes, note sections, and cards outside of notes. Unlike with the automatic connections in Graph view, Canvas connections can be labelled – in effect creating a sort of concept map.

Other visualisations are possible using plugins.

Plugins

Obsidian is very extensible and has a large library of community provided plugins. These make it possible to further extend some built-in functionality.

There are plugins that let you among others:

1. Create mindmaps
2. Create annotations
3. Manage PDFs
4. Create more advanced tables
5. Create databases
6. Plan projects
7. Manage outlines in long notes

👎 Why look elsewhere

Novelty and complexity

Obsidian may require the most adjustment from new users – it is quite unique in how it approaches note taking and data storage. This will suit many people but others will find the learning curve much steeper.

The basics of Obsidian are quite simple but there is a lot to learn if you want to make the most out of its power.

Mobile sync

Obsidian is free but it has some paid features. These are not any of the core functionality but things that require online services which cost the developers money to provide.

Because of the text data, it is easy to sync notes between computers simply by syncing the Obsidian file folder but this does not work with mobile devices. It may also result in some conflicts.

For native and mobile sync, a subscription of $10/mo is required.

Another option, where payment is required is publishing selected notes into a website with Publish which costs $20/mo.

Collaboration

If you want to collaborate on note, you have to look elsewhere. Obsidian has no native provision for collaboration. There is no authorship, no version tracking, no locks for live collaboration.

Of course, because all the notes are in text files, you could use other services for tracking changes – such as GitHub. However, any one of these would require significant work arounds.

Text first – Markdown

You simply have to learn at least the basics of Markdown to use Obsidian. This is probably less than 10 mark up tags, for example:

1. **bold**
2. _italics_
3. * or 1. To start a list
4. #, ##, ###, ### headings
5. [[ ]] internal links
6. # tags

That is definitely manageable but nevertheless another thing to learn.

But the textbased feature means that there is no pen or image manipulation support but some of these features are provided by plugins. But choosing and testing these requires research and testing, so it is another thing to consider.

▶ Find out more

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☑ Alternatives

Logseq (pronounced /logseek/) is the most credible alternative to Obsidian. It is full open source and its strengths are in creating and managing large outlines. It uses the same system of keeping notes in files which makes it compatible with Obsidian notes vaults. You can even switch between the two apps to take advantage of their respective strengths. Logseq also has a vibrant community and plugin ecosystem.

Roam Research is a commercial online application without any free tier. It inspired many imitators. Unlike Obsidian and Logseq, Roam does support

collaboration but also files are stored on the Roam Research website. It also lacks mobile apps.

Others with very similar approach to backlinking and graph display each with their own unique take include (all open source):

- **Dendron:** a plugin for the popular programming app VS Code (both open source).
- **Athens:** which focuses on collaboration by using a graph database.
- **Unigraph**: with more focus on integrating into existing workflows

Remnote Is a similar web-based note taker with its unique selling point on combining notes and flashcards for revisions. It also has automatic sync between web, desktop and mobile apps.

✳ Summary

About	**Obsidian**: Personal knowledge management and note-taking app
Cost	Free
Pros	• Free • Powerful interlinking and tagging • All data local and private • Plugin ecosystem • Supportive community
Cons	• Sync not free • No collaboration • Text-only – plugins required for media support • Requires learning Markdown

Day 24: Academic Reading Framework

Academic reading is **not just turning pages**. It is a complex activity. This framework will help you **evaluate devices**, apps, features and strategies to improve your reading productivity.

ⓘ About

This framework is what the Lab uses to evaluate tools and strategies for academic reading. It goes beyond the focus on 'decoding' from the well-known 'simple view of reading' which equates reading comprehension with decoding and language comprehension. However, this framework designed to explain reading instruction at the lowest level can at best explain reading of individual sentences but not entire texts, let alone academic literature.

Academic reading is very different from reading fiction but it even has many differences from the reading of expository texts such as instructions and emails or general non-fiction.

The Academic Reading Framework starts from the assumption that academic reading has 6 defining characteristics:

1. **Purposeful**	Read to identify, summarise and debate facts and arguments
2. **Strategic**	Read only parts needed for purpose
3. **Non-linear**	Do not read in order of presentation
4. **Active**	Read while highlighting and taking notes

5. Productive and interactive	Read to write and communicate
6. Comparative and cumulative	Read in context and never just one thing

Each of these characteristics has implications for academic readers not just as they are selecting their technologies but also as they are choosing the right approach to their reading. Here is an explanation of these specifics:

→ Purposeful

Academic reading is always done for a specific purpose. This purpose is to gain the ability to identify, summarise, and debate arguments and facts.

Purpose of academic reading	
1. Identify	Arguments and facts
2. Summarise	
3. Debate	

This means that an academic reader will be approaching their texts very differently than somebody who is starting to read a story whose main purpose is to share an experience or perhaps to be able to say 'they've read it'.

Points 2 and 3 will also be different from readers of an instruction manual or a public notice.

What it means for choosing the right approach

This means that an academic reader should not be starting to approach a piece of reading to be able to say 'I've read this' but rather to be able to say 'this text claims' and 'given X, it is or is not a justified claim'.

The approach the reader chooses will vary from text to text but it will rarely be simply sitting down and reading page after page.

What it means for choosing tools

Many default tools do not take into account the purposefulness of academic reading. When choosing the tool such as an e-reader, PDF reading app, or a note taking app, an academic reader may not expect to find it suitable for all situations.

⑭ Strategic

The purposefulness of academic reading means that academic readers have to read strategically. There are too many things to read without making some choices. The choices academic readers make:

1. What to read
2. Which parts of any text to read
3. In what order to read the text

Academics will only read the texts and parts of text that help them achieve the purpose of identifying and debating the relevant facts and arguments.

This may mean reading some texts very carefully, skimming others, or only reading selected sections of others.

What it means for choosing the right approach

For an academic reader being strategic means being selective. This will mean that the academic reader will have to switch between different modes depending on what text they are reading with what purpose in mind. They will switch between: deep reading, skimming and scanning.

What it means for choosing tools

Not all tools are equally well suited to different strategies. For example, it is difficult to skim a text to get an overall sense of its direction by listening to it from beginning to end. But it is ideal along reading to help focus.

In choosing a tool, the academic reader will also have to keep in mind what mode of reading they will use it for and how.

🧬 Non-linear

The most distinctive aspect of academic reading is that it is non-linear. The presentation of academic texts does not reflect the sequence of discovery or writing. And the reader does not always approach the text with the same level of knowledge to be able to make sense of it in the order of printing.

What it means for choosing the right approach

Very often the right order of reading an academic paper or a chapter in a book means starting from the end or even in the middle depending on the purpose. The reader may start with conclusions to help them identify the key concepts and then trace their development through the previous text.

What it means for choosing tools

Any tool for reading academic papers should make it easy to jump back and forth in different sections of the text. This is not always foremost in the minds of the designers of these tools.

Tool designers should always expose the table of contents or allow the reader to create their own.

✍ Active

Academic readers are never simply sitting there and reading. They are always doing other things while reading. They highlight, take notes, connect highlights to others, etc. This makes the process very different from other types of reading which needs to be reflected in the strategies and tools.

What it means for choosing the right approach

Simply highlighting or taking notes while reading can increase the level of understanding while reading.

But the academic reader must also make sure that they direct these active reading strategies towards the purpose for which they are reading and adjust them to the mode they are reading in.

For example, people can highlight important passages but they can also highlight key dates or data points. They may highlight to help them understand the core of the passage or they may highlight key sections they want to return to after their first skim.

The same goes for notes which should probably be aimed towards the output of reading – which is the next feature of academic reading.

What it means for choosing tools

Choosing a tool that makes it easy to make notes or highlights on text is important. But it is also important to enable the reader to manipulate and organise those notes and highlights later.

Sometimes those two aims are in opposition to each other. It is very easy to use a digital stylus to make scribbles on top of a PDF, but then transforming the notes into a knowledge management system may take more effort.

The sorts of notes, academic readers take also differ by context. They may do so of their reading while sitting comfortable and reading on an e-reader or they may do most of it while sitting at a computer.

Deciding which tool to use for what situation and how to integrate the notes from both is a part of the strategy of academic reading. And making those decisions easier is one of the main aims of the lab.

⌨ Productive and interactive

Academic readers read to write. When they write, they write to communicate and otherwise interact with others.

But writing is more than just writing about something we read, it is also a way of helping us formulate knowledge and exposing to ourselves the gaps we may have papered over in our head.

At any rate, writing and speaking is a part of academic reading much more than with other kinds of reading and our strategies and tools need to reflect that.

What it means for choosing the right approach

The academic reader should approach reading as a part of the writing process. "20% of reading is writing." is not a bad formula to adopt.

Writing summaries of what the arguments and facts contained in what they read, is one of the core jobs of academics.

What it means for choosing tools

Reading tools are not necessarily the best for doing extensive writing. So it may not be the most important aspect to look at. But some tools such as Zotero make it possible to write comments of entire readings rather than simply annotating individual sections.

These are some of the considerations to take into account when deciding whether to invest time and money into a tool.

☑ Cumulative and comparative

Academic reading means never reading just one thing. Academic readers don't read papers, they read literatures. And they do not just read papers and books one after the other, they are reading them in a comparative manner.

Just like with individual papers or chapter, academics are also not reading them in a linear way. The way they approach a new problem will depend on their existing familiarity with the field. They may start by collecting papers based on a key-word search and then read abstracts or introductions to some. This will lead to a better familiarity with the key concepts and problems. They will then proceed to read some in more detail and reread others in a new light.

At the end of the process, they will have a deep sense of familiarity with their field. They will have also used interaction (both written and in-person). It is not insignificant that much of what many successful academics read was written by somebody they know or they talked about with someone who knows them.

What it means for choosing the right approach

We should never expect our reading to end with one book or one paper. This means that the same strategic selection academic readers apply to individual readings needs to apply to entire literatures.

Nobody should expect to approach their field in the same way they approach reading their favourite fiction series. They will need to read widely before they read deeply to get a sense of the overall shape of the field. Combine preliminary surface reading with deep reading and cycle through as they develop.

The same strategies that apply to reading individual readings apply across readings, as well.

What it means for choosing tools

Most default tools for reading do not take into account this interconnected nature of academic reading. They focus on opening and presenting individual files and leave all the comparative work up to the reader. This is one of the reasons why many people still print some of their readings.

Only recently have some tools such as MarginNote and LiquidText pay attention to this aspect of reading by allowing the combination of individual files into a single reading project.

Equally, the latest version of Zotero has integrated notes that can be organised across individual reading.

Readwise.io is another tool that allows reviewing and connecting notes across a number of readings.

Their integrations with notetaking apps such as Obsidian or Notion further enables this broader approach to reading.

Many e-readers, on the other hand, limit their ability to organise multiple readings to folders.

Equally, publishers of online texts often build complex systems for people to read multiple readings within their catalogue but do not take into account that no literature is confined to a single publisher.

The overarching implication is that when choosing a reading tool, we need to think about the workflow of getting multiple files to it and retrieving the notes in a way that can be brought together in a knowledge management context.

Even tools such as Calibre for the management of e-books can be part of an academic readers' tool kit.

▶ Find out more

If you would like to get some hands on time with any of our other devices or tools to see how suitable they are for academic reading, please **book _a_ visit** to the Reading and Writing Innovation Lab.