

Optimising content for websites

The importance of
designing your content to
meet the needs of your
users and search engines.



From Newcastle. **For the world.**

What is web content?

Content must exist for a reason. It must be **helpful, valuable, and based on what your audience should know**, not just what we want to say.

Content is not just copy – it is infographics, imagery, film, animation too

Whether it's on a school homepage, webform, or campaign webpage – content must be **written with a clear call-to-action**. Each word, sentence, and paragraph must lead to that call-to-action.

Content must always: explain, inspire, and invite an action

Content **must be written tactically**, always guiding towards an end goal. Make the call-to-action clear at the beginning and end of the content.

Use the body of the content to **lead a user towards making the decision to click the call-to-action**.

Tone of voice

What is tone of voice?

Our 'voice' is how we express our creativity, and how we inspire our audiences. The tone is our 'attitude'. Tone of voice isn't just what we say, but how we say it.

Why does consistency matter?

It means our communications make sense together. Using a clear voice builds familiarity and trust.

Our tone of voice

- Active, rather than passive
- Positive, optimistic, and upbeat
- Everyday, approachable language
- Honest, sincere, and factual
- Concise and direct
- Human and real - people-focused where possible

Try to avoid

- Unnecessary jargon and acronyms
- Overly formal language
- Sounding superior, boastful, or arrogant
- Negativity
- Being tentative
- Complexity or padding out content

Why? The list on the left engages people in reading. The list on the right does not.

Writing benefit-led content

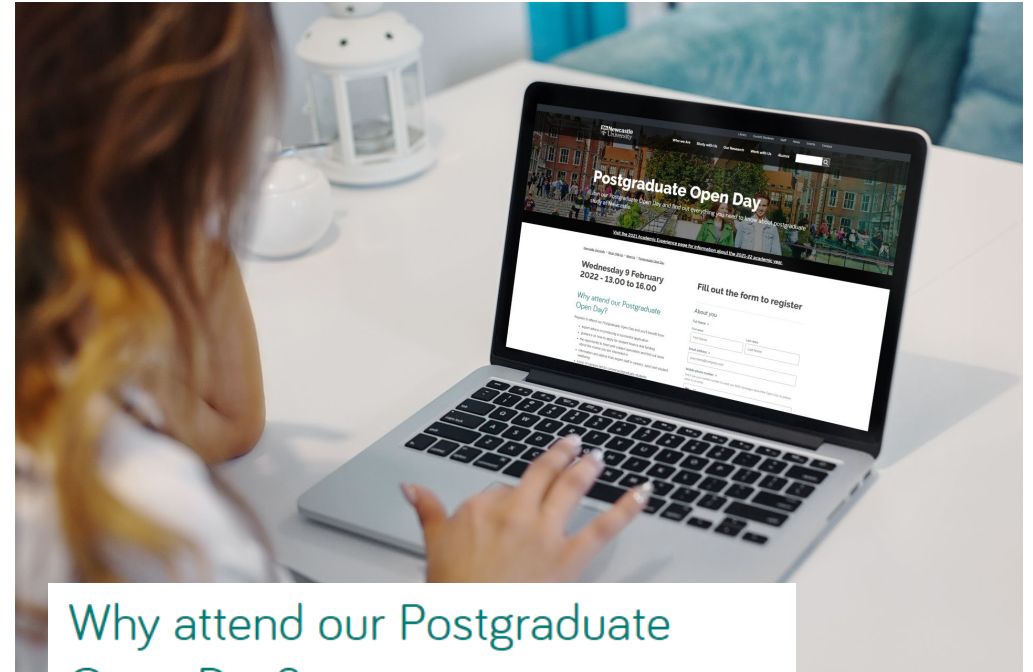
If our offering is the 'what we're doing', the benefits are the 'why we're doing it'.

Benefits should be linked to known problems our audiences have.

They should connect these problems with **how our offering can solve them.**

Focus on the positive impact of our research, teaching, facilities and services for the lives of our audiences.

Relevant benefits will vary depending on who the audiences are.



Why attend our Postgraduate Open Day?

Register to attend our Postgraduate Open Day and you'll benefit from:

- expert advice on producing a successful application
- guidance on how to apply for student finance and funding
- the opportunity to meet with subject specialists and find out more about the course you are interested in
- information and advice from expert staff in careers, sport and student wellbeing
- a tour of campus led by current postgraduate students
- access to our postgraduate café – enjoy a hot drink and cake on us and speak informally to our current postgraduate students

Research-led content design

Newcastle University prides itself on being a **research-led institution**. We market ourselves as offering **research-led teaching**.

So why would we do website design any differently?

We don't.

We're professional practitioners working to web standards that are, in part, derived from academic-led research by Nielsen Norman Group.

We're not the only ones. [Nielsen Norman Group's clients](#) include Adobe, Microsoft, BBC, eBay, Visa, Princeton University and Google.

Meet Jakob

This is **Dr Jakob Nielsen**. He has a PhD in Human-Computer Interaction from the Technical University of Denmark in Copenhagen.

He co-founded **Nielsen Norman Group**, the World Leaders in Research-Based User Experience, back in the 1990s.



His research primarily involves understanding how people use the internet and determining better ways to meet user needs.

He's celebrated worldwide for his research into:

How people read on the web

The findings in his 412-page report (with Kara Pernice) are the culmination of three large-scale eye-tracking studies spanning 13 years, involving more than 500 participants and more than 750 hours of testing session time.

So how do people read on the web?

Nielsen Norman Group have found the vast majority of website users:

- **scan read web content** (79% of users tested in 1997, it's increased since)
- most frequently **scan in an F-Shaped pattern** (identified 2006)
- have time to read at most 28% of the words on a page (2008 research)

Why?

1. Reading from computer and mobile screens is **tiring** (though technological advances have made it easier).
2. The web is a **user-driven medium** where users are trying to achieve tasks quickly and efficiently.
3. Each page competes with hundreds of millions of other pages for the **user's attention**.
4. Life is hectic and people **don't have time to work too hard** for their information. Content has to survive a cost-benefit analysis by users.

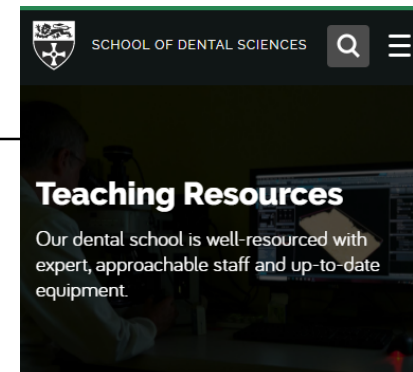
Measuring the Effect of Improved Web Writing

To measure the effect of some of the content guidelines we had identified, we developed five different versions of the same website (same basic information; different wording; same site navigation). We then had users perform the same tasks with the different sites. As shown in the table, [measured usability](#) was dramatically higher for the concise version (58% better) and for the scannable version (47% better). And when we combined three ideas for improved writing style into a single site, the result was truly stellar: **124% better usability**.

Site Version	Sample Paragraph	Usability Improvement (relative to control condition)
Promotional writing (control condition) using the "marketese" found on many commercial websites	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. In 1996, some of the most popular places were Fort Robinson State Park (355,000 visitors), Scotts Bluff National Monument (132,166), Arbor Lodge State Historical Park & Museum (100,000), Carhenge (86,598), Stuhr Museum of the Prairie Pioneer (60,002), and Buffalo Bill Ranch State Historical Park (28,446).	0% (by definition)
Concise text with about half the word count as the control condition	In 1996, six of the best-attended attractions in Nebraska were Fort Robinson State Park, Scotts Bluff National Monument, Arbor Lodge State Historical Park & Museum, Carhenge, Stuhr Museum of the Prairie Pioneer, and Buffalo Bill Ranch State Historical Park.	58%
Scannable layout using the same text as the control condition in a layout that facilitated scanning	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. In 1996, some of the most popular places were: <ul style="list-style-type: none"> • Fort Robinson State Park (355,000 visitors) • Scotts Bluff National Monument (132,166) • Arbor Lodge State Historical Park & Museum (100,000) • Carhenge (86,598) • Stuhr Museum of the Prairie Pioneer (60,002) • Buffalo Bill Ranch State Historical Park (28,446). 	47%
Objective language using neutral rather than subjective, boastful, or exaggerated language (otherwise the same as the control condition)	Nebraska has several attractions. In 1996, some of the most-visited places were Fort Robinson State Park (355,000 visitors), Scotts Bluff National Monument (132,166), Arbor Lodge State Historical Park & Museum (100,000), Carhenge (86,598), Stuhr Museum of the Prairie Pioneer (60,002), and Buffalo Bill Ranch State Historical Park (28,446).	27%
Combined version using all three improvements in writing style together: concise, scannable, and objective	In 1996, six of the most-visited places in Nebraska were: <ul style="list-style-type: none"> • Fort Robinson State Park • Scotts Bluff National Monument • Arbor Lodge State Historical Park & Museum • Carhenge • Stuhr Museum of the Prairie Pioneer • Buffalo Bill Ranch State Historical Park 	124%

Helping scan readers engage with your content

- Include the most [important points in the first two paragraphs](#) on the page (inverted pyramid)
- Use [headings](#) and subheadings. Ensure they look more important, so users may distinguish them quickly.
- [Start headings, subheadings and bulleted lists with the words carrying most information.](#) If users see only the first 2 words, they should still get the gist of the following section.
- Visually group small amounts of related content — for instance, with a border or different background.
- Bold important words and phrases.
- Take advantage of the different [formatting of links](#). Ensure that links [include information-bearing words](#) (instead of generic “go”, “click here” or “more”). This technique also improves [accessibility](#).
- Use bullets and numbers to call out items in a [list](#) or process.
- [Cut unnecessary content.](#)



[Newcastle University](#) > [School of Dental Sciences](#) > [Study with Us](#) > [Teaching Resources](#)

Enriching the learning environment

We are in one of the **most spacious and best-equipped dental facilities in the UK**. Teaching staff include:

- top-level research scientists
- University and NHS-based clinical academics
- experienced clinicians from general practice

It's a blend of **individuals that enrich the learning environment**.

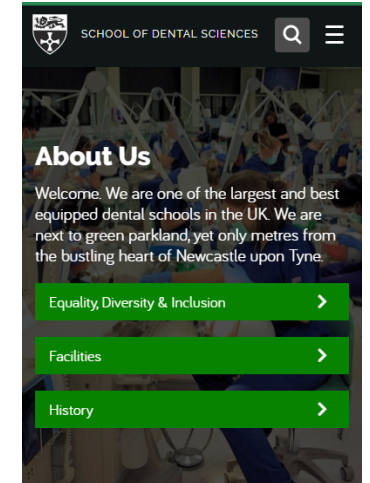
Quality

Our teachers contribute to the scientific evidence that underpins our teaching and our teachers are active clinicians.

They hold combined University and NHS appointments. The quality of our teaching is a top priority. Our staff have won national and international recognition, including:

- National Teaching Fellowships
- Dental Defence Union National Dental Teacher of the Year awards
- Distinguished Scientist awards

The latter came from the [International Association for Dental Research](#). It recognises research excellence. The high quality of our teaching is very much driven by our research.



[Newcastle University](#) > [School of Dental Sciences](#) > [About Us](#)

Established reputation

The dental school has an **established reputation for excellence** in:

- teaching
- research
- clinical service

It provides a **positive and well-resourced environment for work and to study dentistry**.

Consistent success

Our work **contributes to the success of the University**. This is not just in dental science but in medicine and life sciences. This is evident in the [UK and International league tables](#)



“ National student surveys show high ratings for the dental school, city and the region. ”

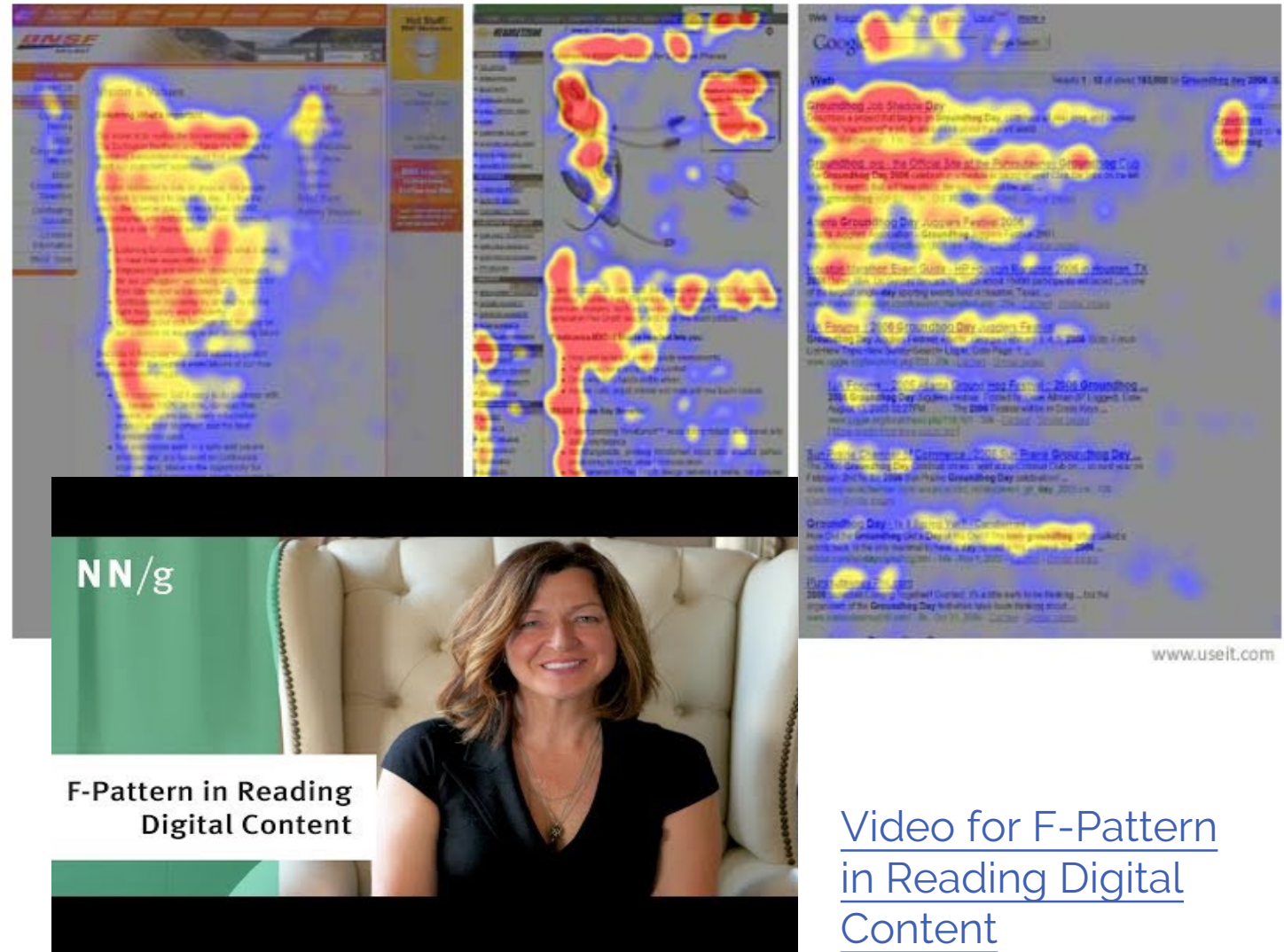
F-shaped pattern

Nielsen Norman Group's research identifies this as the most prevalent way for people to read webpages.

Users tend to **read the headline and introduction of the page**.

Then they look for **visual cues on the left** as they scroll down the page.

Setting your content up to cater for this behaviour allows users to get a summary of the page and pick out pertinent bits for them.



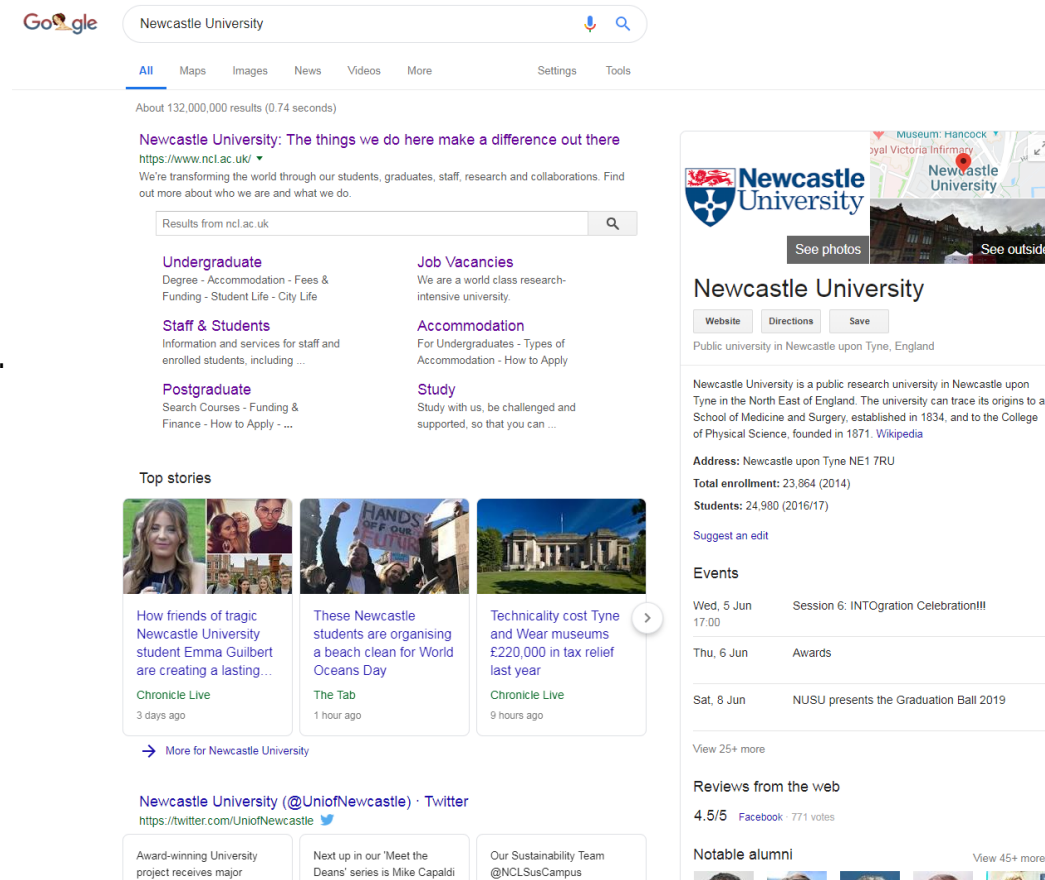
[Video for F-Pattern in Reading Digital Content](#)

Attention leans to the left

We read from left to right in most countries across the globe (not all). Scan reading for most therefore means attention leans to the left.

Google are as aware of this behaviour as anyone else. Their search results cater for it, with nothing in the right of the page.

It's key in presenting content that you make as much impact down the left as possible.



It means front-loading sentences/bulleted lists with keywords and phrases pertinent to the subject of the page.

Scannable or not

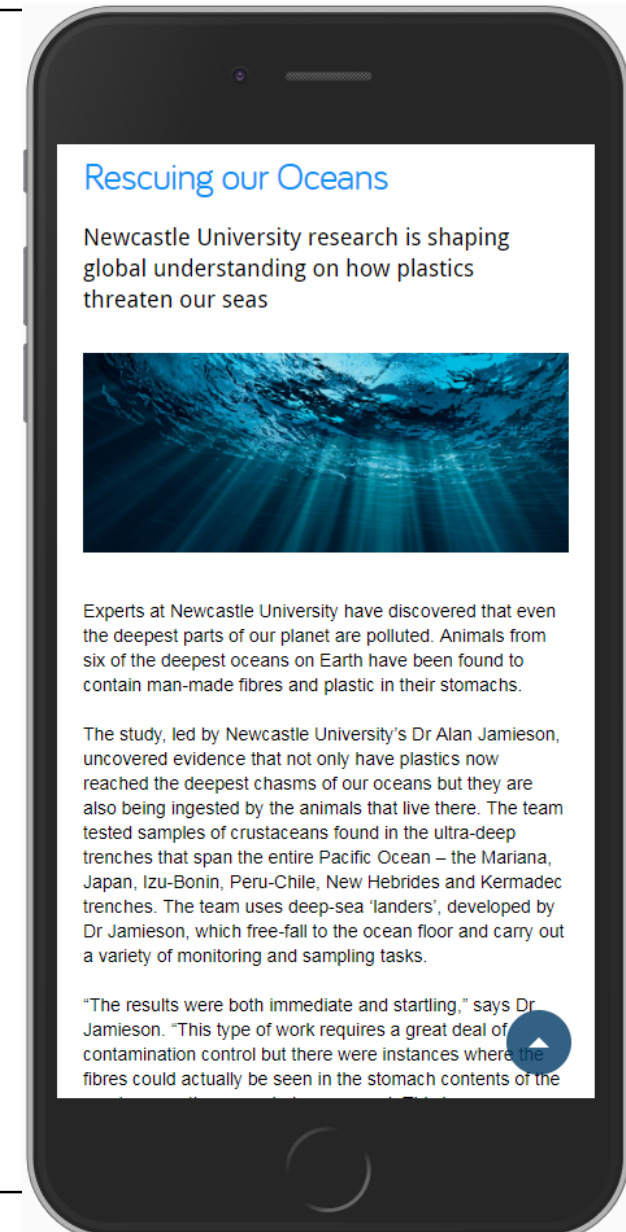
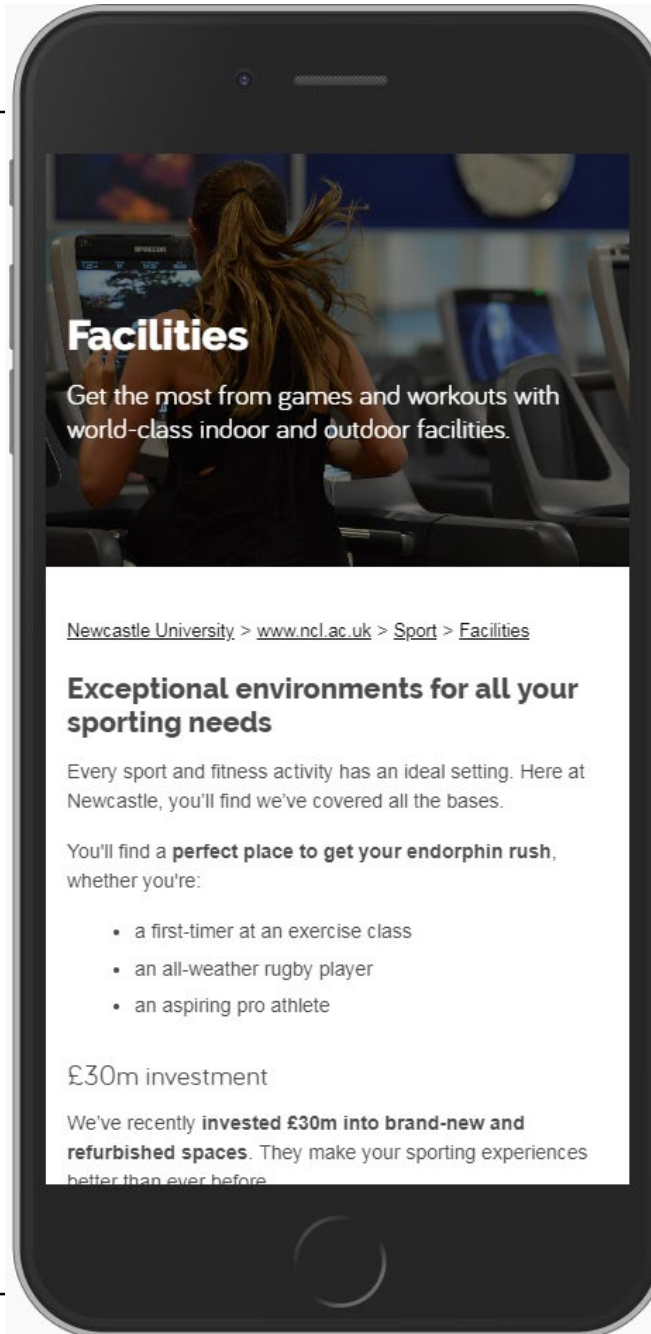
The example on the left gives you:

- **clear titles** to allow users to pick and choose content
- **summarises the content** of the page **using bold**

It's **easy to scan**, with users able to pick out key points.

It works with the F-shaped pattern, **placing content where users should see it.**

The example on the right gives you few visual cues to scan the page.



Readability

To achieve the best results for scan readers, **Nielsen Norman Group's (NN/g) research** advocates **keeping sentences short and active**. Applying the [Flesch-Kincaid Grade Level Formula](#) helps define how easy it is to read content. Generally, it prescribes that Plain English content should mean:

- **sentences of no more than 20 words**
- **active rather than passive voice**
- **a grade level of no greater than 9**

$$0.39 \left(\frac{\text{total words}}{\text{total sentences}} \right) + 11.8 \left(\frac{\text{total syllables}}{\text{total words}} \right) - 15.59$$

Nielsen Norman Group's research with website users helps us determine how easy it should be for our audiences to efficiently read our content.

- **General audience = no greater than grade level 9**
- **Research audience = no greater than grade level 12** ([accepts a certain level of necessary jargon](#))

NN/g's research shows grade level 13 or above requires too much effort for audiences (experts included).

Sentence length

Shorter the better

It's important that sentences are short and convey a single point. That way it's **easy for users to understand what you're saying, one point at a time.**

Therefore sentences shouldn't really be any longer than 15 to 20 words.

[Research](#) shows that when average sentence length is 14 words, readers understand more than 90% of what they're reading. At 43 words, comprehension drops to less than 10%.

For example:

Especially thanks to Dr Ralph Rayner, the chairman of Sonardyne, for making this happen and to Mr John Ramsden, managing director of Sonardyne, who visited us on the day, talked to students about their plans for the future and gave a lecture about Sonardyne and emerging technologies in the field.

50-word sentence – grade level 16 – poor readability

Thanks to Dr Ralph Rayner, the chairman of Sonardyne, for making this happen.

Thanks also to Mr John Ramsden, managing director of Sonardyne, who:

- visited us on the day
- talked to students about their plans for the future
- gave a lecture about Sonardyne and emerging technologies in the field

Same content – grade level 7 – good readability

Do you want your audience to spend all of their time trying to process your long sentences? If you do, then you're failing your audience. Get to the point.

Passive voice

Who and what first?

Passive voice = detail > action > subject – this means you give users other details before telling them what's been done and by whom.

Active voice = subject > action > detail – you're telling your audience who's involved and what they're doing before the detail.

Audiences get frustrated with content when you don't answer who and what first.

[Use active voice.](#)

Passive example

The entire stretch of highway was **paved by the crew.**

Active example

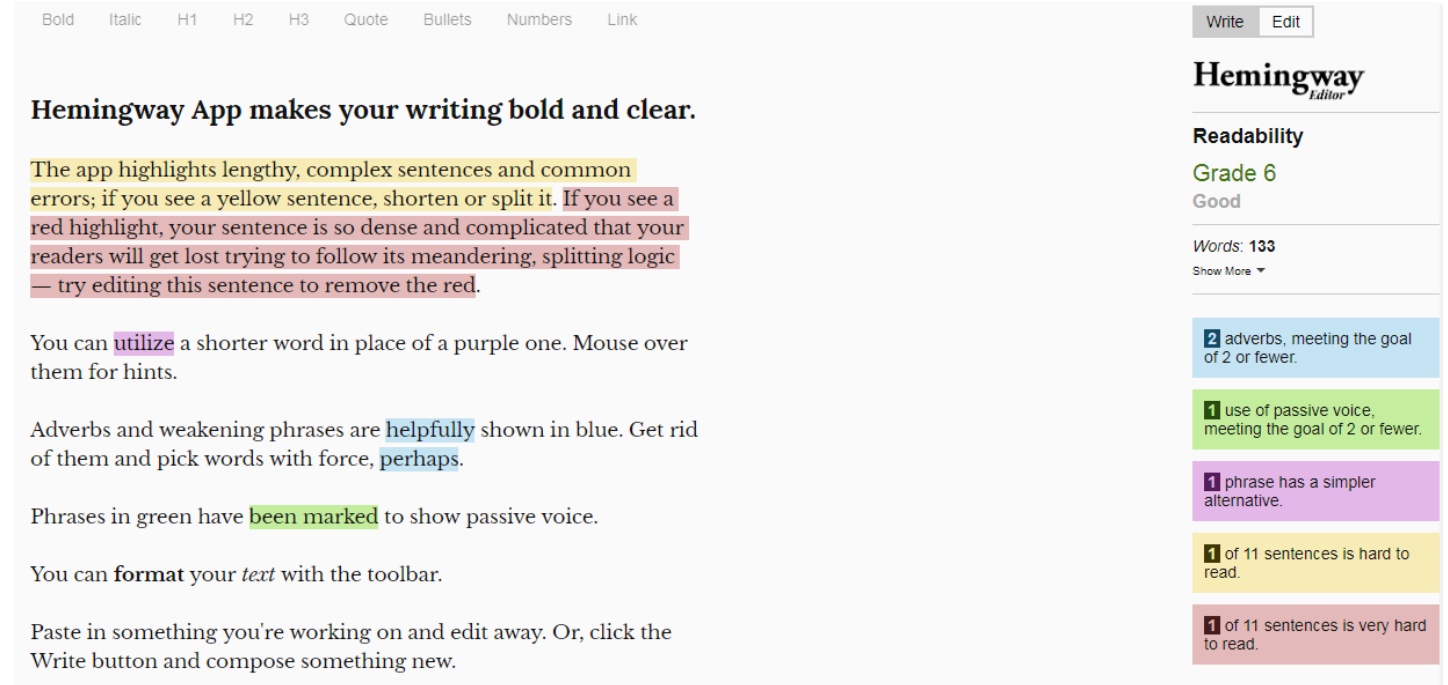
The **crew paved** the entire stretch of highway.

How do we test content for readability?

There are **tools available online to help test and edit content for readability and grade level.**

The two we most commonly use are:

- [Hemingway App](#) (for editing/testing) (free)
- [Silktide](#) (for testing) (Uni login)



Hemingway App makes your writing bold and clear.

The app highlights lengthy, complex sentences and common errors; if you see a yellow sentence, shorten or split it. If you see a red highlight, your sentence is so dense and complicated that your readers will get lost trying to follow its meandering, splitting logic — try editing this sentence to remove the red.

You can **utilize** a shorter word in place of a purple one. Mouse over them for hints.

Adverbs and weakening phrases are **helpfully** shown in blue. Get rid of them and pick words with force, **perhaps**.

Phrases in green have **been marked** to show passive voice.

You can **format** your *text* with the toolbar.

Paste in something you're working on and edit away. Or, click the Write button and compose something new.

Readability
Grade 6
Good

Words: 133
Show More

- 2 adverbs, meeting the goal of 2 or fewer.
- 1 use of passive voice, meeting the goal of 2 or fewer.
- 1 phrase has a simpler alternative.
- 1 of 11 sentences is hard to read.
- 1 of 11 sentences is very hard to read.



Accessibility

Some interesting statistics:

- Dyslexia International suggests that **nearly 10% of the population experience dyslexia. That equates to around 700 million people worldwide.**
- The estimated number of people **visually impaired in the world is 285 million, 39 million blind and 246 million having low vision.**
- **1 in 12 men and 1 in 200 women worldwide are colour blind = 300 million people.**
- More than 5% of the world's population – or **466 million people – have disabling hearing loss.**

We should not hinder or discriminate against users with these issues by providing inaccessible content.

But, looking at these figures, **can we really afford to exclude these people** from engaging with our research, becoming students here or working with us?

Readability is accessibility

From Web Content Accessibility Guidelines 2.0 - [3.1.5 Reading Level](#): When text requires reading ability more advanced than the [lower secondary education level](#) after removal of proper names and titles, [supplemental content](#), or a version that does not require reading ability more advanced than the lower secondary education level, is available. (Level AAA)

[Making Content Usable for People with Cognitive and Learning Disabilities](#) is a W3C working group. It's led by Lisa Seeman-Horowitz, an accessibility expert who's worked with IBM, SAP, Ex Libris, the European Commission, Firefox, Wikipedia, Google, Adobe, the Ministry of Education, and NASA. Based on user testing and persona development, it recommends:

- Keep paragraphs short. Have only one topic in each paragraph.
- Try to have the aim of the paragraph or chunk at the beginning.
- Use short sentences. Have only one point per sentence.
- Use bulleted or numbered lists.
- Use short descriptive headings.

Dyslexic users and passive voice - "Compared to their non-dyslexic peers, individuals with dyslexia were significantly less accurate and marginally slower on passive sentences." - [Wiseheart, R., Altmann, L.J.P., Park, H. et al. Sentence comprehension in young adults with developmental dyslexia. *Ann. of Dyslexia* 59, 151 \(2009\).](#)

Blind users and sentence length – Findings from a 2020 [Oslo Metropolitan University study](#) into screen reader use determined most participants exhibited the highest comprehension and lowest workload with sentences comprising 16–20 words.

Content accessibility – style points

Capitals – keep them to a minimum (nouns and page titles only please)

Why? It's all about shape. People with cognitive impairments can process lower case letters more easily because they are distinctive in shape. CAPITALS ARE NOT.

Italics – no thank you

Why? It's adding a style that corrupts the legibility of the font for the user. Having a perceivable font is critical to users with cognitive or visual impairments.

Bold – yes please, but sparingly

Why? It **helps scan readers** to quickly **pick up keywords and phrases** from your content.

But using bold like this doesn't help anyone. It doesn't aid scan reading. It just hurts users' eyes and makes content more difficult to read.

Links – descriptive please (not click here)

Why? So screen readers and search engines know where you're sending users, and what they'll get.

Content accessibility – supplementary content

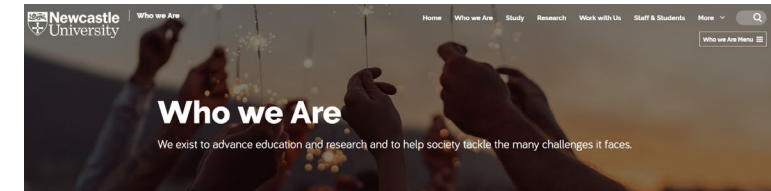
Don't use an image or video in place of words

Images that try to convey lots of written detail won't be accessible to partially-sighted or blind users. And it probably won't legibly display on mobile devices either. An image should support written content, with **alternative text (alt text)** for screen readers and search engines.

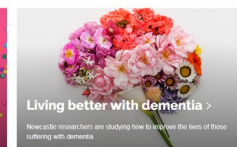
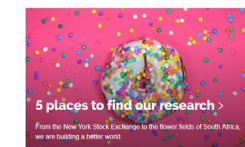
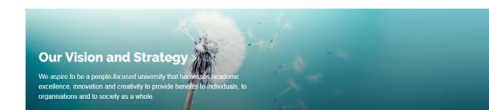
Video embeds from YouTube can be [inaccessible in certain countries](#) (China, Sudan etc) and to those with poor internet connections. Video requires subtitles for the hearing-impaired. It is supplementary content.

The number of words on a page is important for **SEO**, as **too few words** can affect the ranking of page.

[Helpful posters about Accessibility from the Government Digital Service.](#)



From Newcastle. For the world.



See more of our vision in action >

This page relies too heavily on a video that might not be accessible to all.

So there's Google to consider...

I mentioned that Google was **a client of both Jakob Nielsen and Lisa Seeman-Horowitz**. So it doesn't take a genius to work out that Google cares about:

- how people read on the web
- accessibility

They have a place when looking at **search engine optimisation – SEO**. Google have designed their robots to read like humans, as much as possible.

I'm not going to go into great detail about SEO, as I provide links to information about [Content SEO](#) and [Technical SEO](#). But I'll cover a few of the optimising essentials around:

- On-page SEO (your content)
- Technical SEO (how Google interacts with your website's code)

Metadata – making the right first impression for users searching in Google

A **page or meta title is the first impression a user gets** of your site when they search for a product, service or query. Not only does it indicate to users what's on your page, it's also used by search engines to decide **how relevant you are** to a user's needs.

Page titles shouldn't exceed more than 50-60 characters and should always **include your target keyword**. Avoid jargon, acronyms and anything a search engine or new user wouldn't understand. You can use [a SERP generator](#) to get the length of titles and descriptions right.

Good example

Page title maximum length is roughly **50-60 characters**

n500 - Marketing BSc - Undergraduate - Newcastle University
<https://www.ncl.ac.uk/undergraduate/degrees> ▼
Marketing identifies, anticipates and satisfies customer needs and is integral to MKT3012
Direct and Digital Marketing · MKT3014 New Product and Service ...

VS

Study Digital Marketing | Undergraduate | Newcastle University
<https://www.ncl.ac.uk/undergraduate/degrees/>
Study at an internationally renowned, triple accredited business school. Join the business leaders of tomorrow, find out about 2020 enrolment with us, here.

Meta description maximum length is roughly **120-158 characters**

Poor example

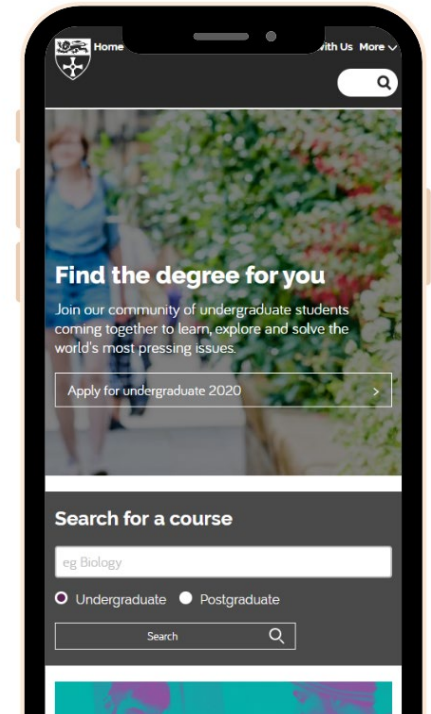
Keywords, metadata and page copy

Metadata

- **Include your main target keyword.** Google will embolden a keyphrase if it's in the description. This can improve click-through rate.
- Including **numbers in meta descriptions** has been proven to increase click-through rate.
- Pepper **calls-to-action throughout**, such as 'find out more,' 'study with us,' 'forge your career'.

On-page copy

- Include target keywords (gathered from keyphrase research) naturally throughout the copy. Don't stuff them in for the sake of it. Google can see you doing it.
- A good ratio is usually **5 keywords per 100 words of copy**, but this isn't prescriptive.
- A lot of organic traffic comes from mobile. So, **accommodate smaller screens** by using **bulleted lists, clear and SEO-optimised subheadings and short paragraphs.**
- Make sure link text is descriptive. Only link to relevant, internal pages within your own respective site.



Headings – helping Google navigate your page

H1 – Main heading – should give Google (and users, particularly those with screen readers) a clear idea of what the page is about. There should be one.

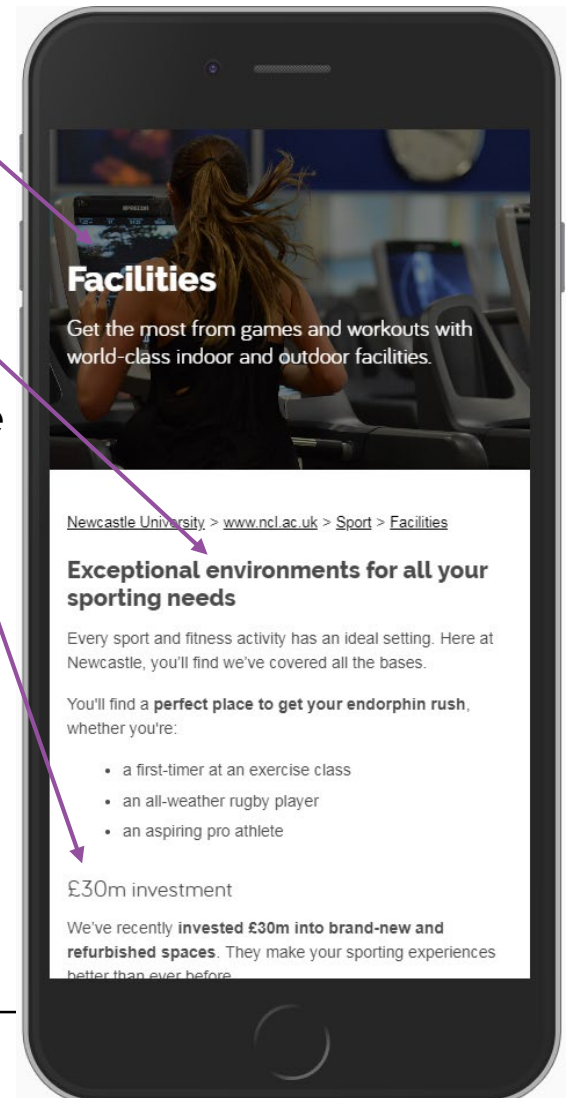
H2 – Main sub-headings – gives prominence to the main sections of content on your page – should be short and descriptive.

H3 – Used to give additional information pertinent to the main sections of a page or to divide main sections between audiences (using accordions).

H4 – For any additional headings that break down the sub-sections of the main sections further.

Headings should always follow a logical structure:

H1, H2, H3, H2, H3, H3, H2, H3, H3 as an example. **H1, H4, H2** is not logical.

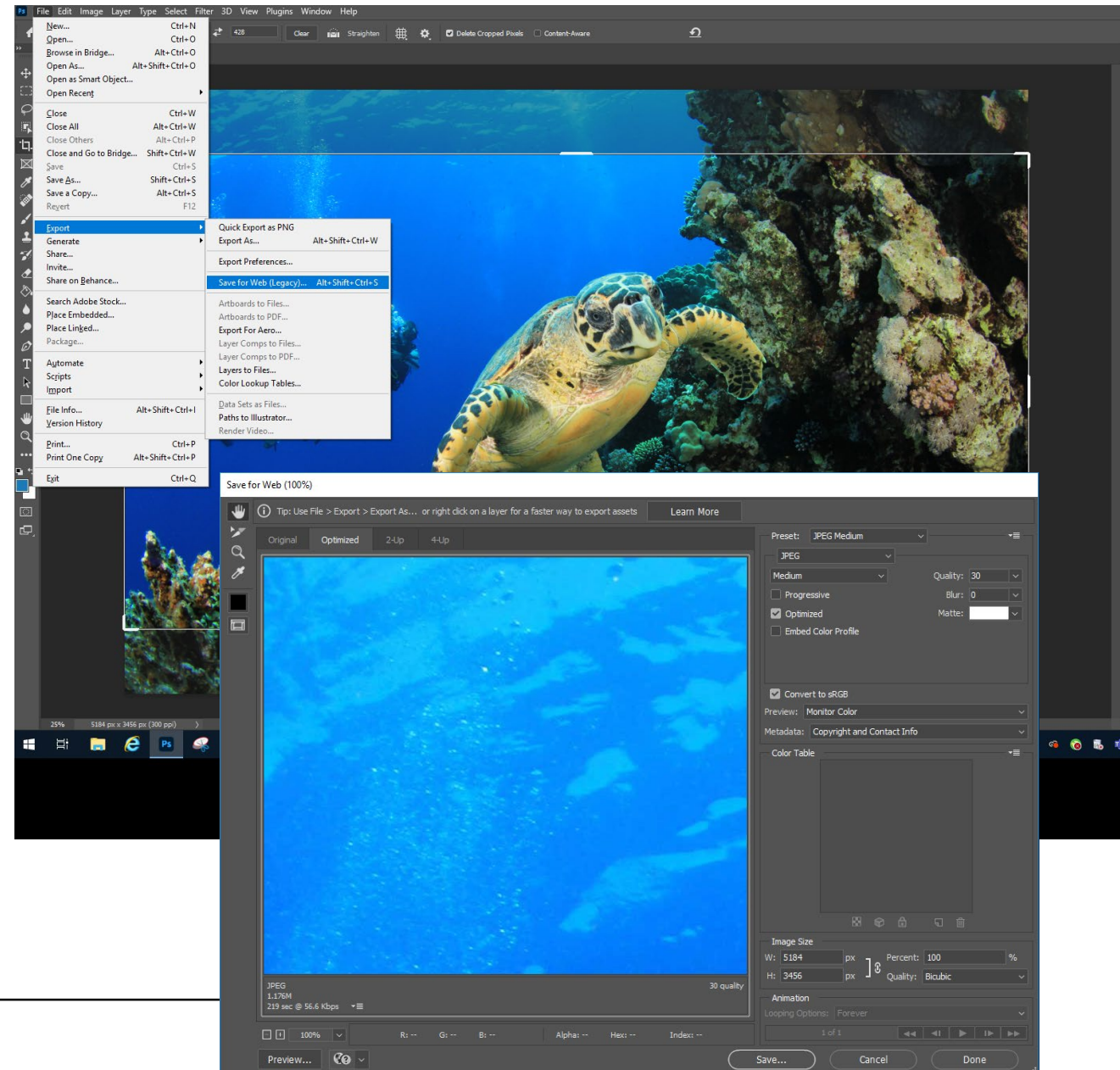


Optimising images

Optimising images for the web is important. Page load is an SEO ranking factor and unoptimised images add to page load.

1. Follow our pixel width and height guidelines for content types = <https://www.ncl.ac.uk/design-system/ux/images/sizes/>
2. Use an original high-quality image and resize to the right specifications (don't use an 8k thumbnail and increase size)
3. Use Adobe Photoshop (paid) or Photopea (free) for editing. We can provide templates to help you get the right crop on your image.
4. Use the Export function to save.
 - For Photopea - Select the 'Export as' option to control the file size. Change the Quality setting to 30%.
 - For Photoshop – Export, Save for Web (Legacy), set to JPEG Medium (Quality 30%) and tick Optimised.

To check on and effectively optimise images you currently have on your website, use **SilkTide**. It tells you which images are not optimised and provides the optimised version for you to download and upload to T4.



Optimising videos

We always add videos to an uploading service (preferably YouTube) and embed to the website.

To embed, we use [Iframely](#) and paste the embed link generated by YouTube to get the relevant code to put into T4.

With YouTube embeds, Iframely offers the ability to check two boxes that help improve accessibility and page load:

- Closed captions
- Hold load and play until clicked

Both should be ticked.

Then add the code into components via the Tools > Source Code option in the T4 text editor, or get us to if you don't have access.

Environmental Science Research ...

Newcastle University / Sep 18, 2020

Mobile Desktop

```
<div><div style="left: 0; width: 100%; height: 0; position: relative; padding-bottom: 56.25%;><iframe src="//cdn.iframe.ly/qly2kLs? cc_load_policy=true&click_to_play=1" style="top: 0; left: 0; width: 100%; height: 100%; position: absolute; border: 0;" allowfullscreen scrolling="no" allow="autoplay *; accelerometer *; clipboard-write *; encrypted-media *; gyroscope *; picture-in-picture *;"></iframe></div></div>
```

COPY CODE

- Closed captions
- Hold load & play until clicked

Start from:

ex.: 11,1m10s

End on:

ex.: 11,1m10s



To add the options editor to your app, take a [read here](#)

Optimising PDFs

Generally, we'd advise not using PDFs at all, as they're not great for accessibility or for mobile users.

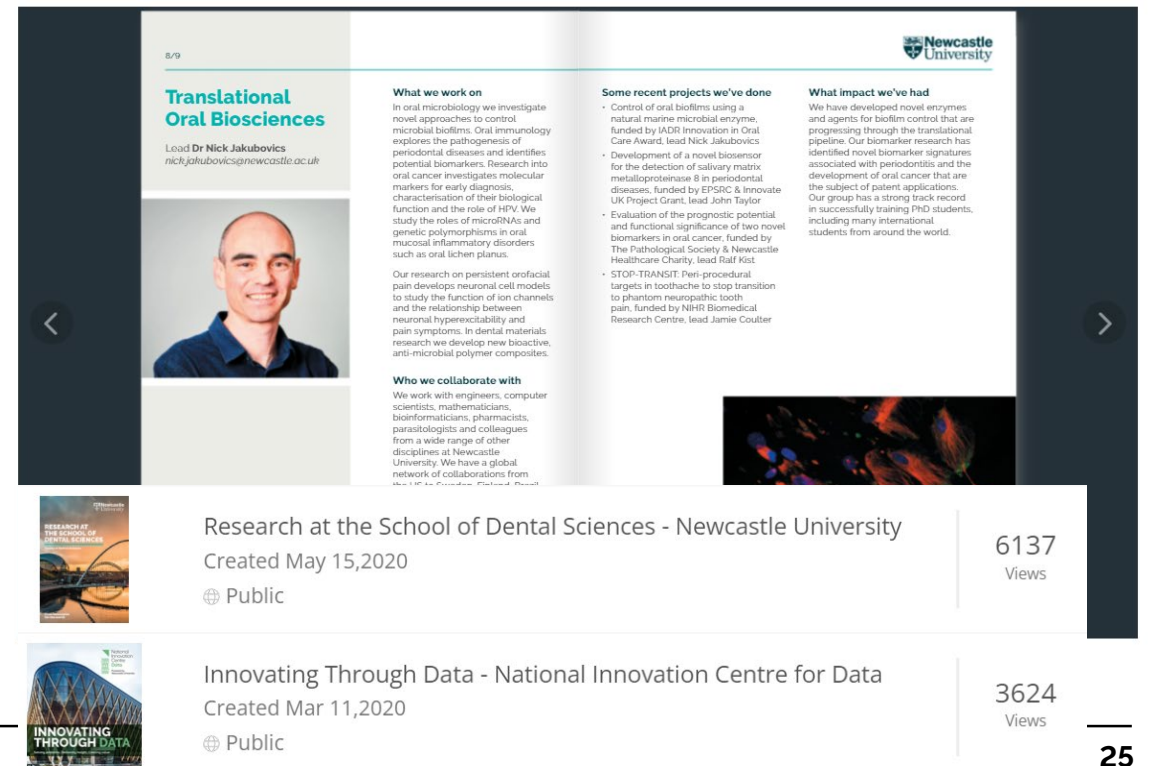
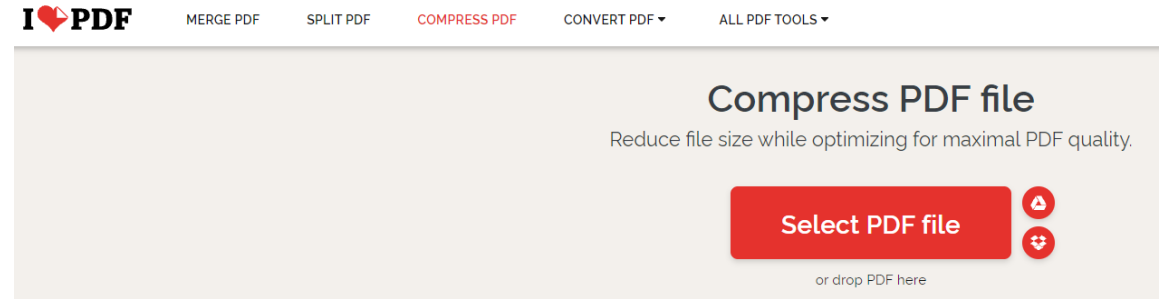
However, we realise that the University likes their publications to be downloadable or showcased online.

We don't want our users to have to download a 28MB glossy brochure. Why, because when you upload a PDF it generates a url to load it for the user.

If that url is slow to load, that's bad for SEO and annoys your user. There are two options:

- **Optimise** – run your PDF through [I Love PDF](#) compression and upload at less than 1MB (good for anything that's not too showy)
- **Showcase** – find a service like [YUMPU](#), publish and embed using Iframely (see last slide) (for the high-quality brochures)

YUMPU allows you to add metadata to enhance findability. It also provides analytics for the views of your publications.



Tools, references & books

Tools

- [Hemingway App](#) (free)
- [Silktide](#) (University login)
- [YUMPU](#) (free or paid)
- [I Love PDF](#) (free)
- [Iframely](#) (free)
- [Photopea](#) (free)
- [SEObility SERP Generator](#) (free)

Books

- **Content Design** – Sarah Richards
- **Content Strategy** – Kristina Halvorson
- **Killer Web Content** – Gerry McGovern
- **The Stranger's Long Neck** – Gerry McGovern
- **Letting Go of the Words** – Janice Redish

Video

- Nielsen Norman have [short videos covering topics in their articles](#).

Articles

- [Text Scanning Patterns: Eyetracking Evidence](#)
- [The Layer-Cake Pattern of Scanning Content on the Web](#)
- [How Chunking Helps Content Processing](#)
- [Plain Language Is for Everyone, Even Experts](#)
- [Inverted Pyramid: Writing for Comprehension](#)
- [Writing Digital Copy for Domain Experts](#)
- [F-Shaped Pattern of Reading on the Web: Misunderstood, But Still Relevant \(Even on Mobile\)](#)
- [7 Tips for Presenting Bulleted Lists in Digital Content](#)
- [Reading Content on Mobile Devices](#)
- [Website Reading: It \(Sometimes\) Does Happen](#)
- [Horizontal Attention Leans Left](#)
- [The Impact of Tone of Voice on Users' Brand Perception](#)
- [Better Link Labels: 4Ss for Encouraging Clicks](#)
- [Writing Hyperlinks: Salient, Descriptive, Start with Keyword](#)
- [Lower-Literacy Users: Writing for a Broad Consumer Audience](#)

Key takeaway

Users conduct a cost-benefit analysis of the journeys they undertake on websites.

The cost is time, effort and energy. If the cost outweighs the benefit – they leave dissatisfied.

User-centred design = Benefits to the user must outweigh costs. Meet user needs to achieve business goals.