

Assistive Technology to help neurodivergent people at work

What is neurodiversity?

"Neurodiversity" refers to a range of Specific Learning Difficulties, including:

- Dyslexia
- Dyspraxia
- ADHD
- Dysgraphia
- Dyscalculia
- Autism Spectrum Condition

It is estimated that at least 10% of people have at least one neurodiverse condition. Neurodiverse people often have more than one condition, for example dyslexia and ADHD.

Neurodiverse people are not intellectually impaired but their brains process information differently. This brings strengths to the individual as well as making some aspects of their daily life more difficult.

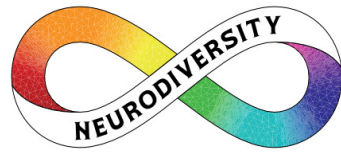
It's common for people to go undiagnosed until later in life. They may have had bad experiences in school, when their genuine difficulty wasn't understood, and that may make them unwilling to seek a diagnosis. Or – if they do have a formal diagnosis – it may be something they're reluctant to disclose to employers or managers.

What are neurodiverse strengths?

A person's neurodiverse strengths will vary between individuals as well as the different conditions. But neurodiverse strengths can include:

- Empathy
- Creativity
- Innovative thinking
- Persistence
- Imagination
- Analytical skills
- Visual thinking
- Problem-solving

How can neurodiversity affect people in the workplace?



As well as the strengths associated with neurodiversity, people without the right support or assistive technology can struggle in the workplace with issues such as:

- Organising their work
- Punctuality and keeping to deadlines.
- Capturing their ideas
- Reading speed
- Reading comprehension
- Writing
- Spelling
- Grammar
- Punctuation

Because of the strain this puts on a person, they may also struggle with:

- Fatigue
- Anxiety and stress
- Depression
- Planning and working memory challenges

How will the neurodiverse person struggle at work?

In the workplace, a person might struggle with issues including:

- Tasks taking longer to complete than expected
- Translating thoughts into written form with proper sentence structure
- Written tasks such as emails, letters, or reports, due to problems with spelling, grammar and punctuation
- Proofreading and checking written work – they may do this several times to identify mistakes, but this will be time-consuming
- Reading can also be time-consuming, as they may need to re-read text several times to process and recall it
- Problems with reading speed and accuracy
- Writing down and organising new information
- Taking notes, especially in meetings or for information given verbally
- Writing up information to ensure it has been captured accurately and then organised and structured effectively

These difficulties can cause frustration, causing the person to feel overwhelmed and stressed.

If this weren't difficult enough, the extra time needed to complete specific tasks can adversely affect time-management and organisational skills.

Can this have a knock-on effect?



The relationship between stress and dyslexia in the workplace is well known, but it is just as true of the other neurodiverse conditions.

Stress, anxiety, and pressure often make the symptoms of a neurodiverse condition worse. No one performs at their best if their confidence is low or they feel that they're finding their work harder than their colleagues and don't know why.

For neurodiverse people, learning new information and recognising new structures and routines can be challenging due to slower information processing and poor working memory. So new information often requires more time, practice and repetition, and visual aids to learn and implement it.

How can assistive technology help?

Software for Reading and Writing

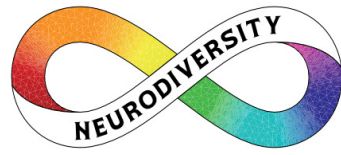
ClaroRead/Read&Write

- These programs enable the user to hear the words as they read them, at a speed that suits them
- It's easy to follow, as the font and background change colour as the reader goes along
- This enables the user to **see and hear** the information, which helps them to absorb and process it
- The built-in dictionaries provide easy access to definitions, both in pictures and words
- These programs help neurodiverse people to recognise and understand written information
- AND they build a list of words, which the user can download and make notes on, to help them remember and process the unfamiliar terms they've looked up

Claro Read and Read&Write enable users to:

- Fully engage with written information more quickly
- Improve the accuracy and speed of their reading and writing
- Improve the accuracy of their proof-reading
- Learn and process questions more efficiently
- Reduce the likelihood of becoming tired or confused
- Gain confidence in working with written materials

Global Autocorrect



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Global Autocorrect corrects misspelt words automatically. It allows the user to type without frequently stopping, worrying unduly about spelling and thus interrupting the flow of their ideas. The F2 key can be used to create text phrases instead of typing the same thing repeatedly.

Lightkey

Lightkey learns the user's unique writing style and gradually delivers a highly personalised experience. It offers more than 60 industry-oriented content domains, such as criminal law, technology, and academia. The user can customise it further by importing their most used abbreviations and words.

Lightkey can be used as an alternative to Dragon for dictation in an email (maybe where short responses are required), Word and all other applications, for example, NICHE, EAS, and System One.

Lightkey learns the user's typing patterns and gradually predicts up to 12 words, including punctuation marks, allowing them to compose their content faster, with confidence.

Another benefit is that the user doesn't need to pause to go back and fix spelling and grammar mistakes. The user can just hit 'tab', keep going and preserve their line of thought.

Software for Dictation

Dragon Professional

Dragon Professional with a USB headset is particularly beneficial for structured writing as it helps the user to capture their ideas when writing reports in Word, or emails in Outlook. It also improves spelling, writing fluency, sentence structure, and the speed at which content can be produced.

Also, it's useful for someone to be able to dictate ideas when they're struggling to concentrate or lacking motivation and can't begin writing out ideas.

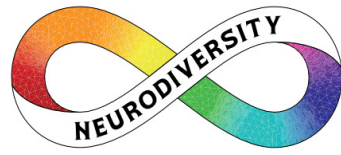
Dragon Professional could be used in conjunction with Inspiration or MindView's mind mapping software to help start casual planning and formulation of ideas without the pressure of beginning the main body of the report, letter or email work.

Software for Proof-reading

Grammarly Premium

Email: info@n-attc.co.uk

Website: www.n-attc.co.uk



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We recommend a subscription to Grammarly Premium to support proofreading and overcome problems with grammar, spelling, and sentence structure. Grammarly can be used on all types of devices, including computers, smartphones and tablets.

There is a free version of Grammarly but it only checks essential grammar and spelling.

The premium version of Grammarly provides advanced checks for:

- Incorrect adverb placement
- Missing verbs
- Colloquial verb phrasing
- Incorrect verb tenses
- Faulty parallelism
- Homophones (where words which sound the same are confused, such as their and there, or route and root)
- Double subject entries
- Grammar, context, and sentence structure
- Punctuation errors and omissions

Grammarly has both a Microsoft Word Add-in and Microsoft Outlook. Its primary benefit is that it can detect errors that Microsoft Word misses.

Grammarly, unlike Microsoft Word, provides a detailed explanation about the reasons for the mistake, allowing the person to learn from their errors. The built-in grammar check facility in Microsoft Word offers only a very limited insight. Grammarly can also detect wordy sentences and the use of repetitive words.

Essentially, Grammarly enables richer engagement with the written word, making proofreading less laboured, improving writing and vocabulary use overall, and reducing the stress and anxiety this causes. This improves productivity in the workplace so that the individual, colleagues, and the organisation all benefit.



Software for Brainstorming and Organising Tasks

Inspiration or MindView

We recommend Inspiration or MindView as they both have a user-friendly interface. Attaching files is intuitive in Inspiration or MindView.

Both Inspiration and Mindview can create projects and tasks and export them to Microsoft Outlook tasks or Global Tasks by Lexable.

This helps to improve the user's ability to capture their ideas, including using mind maps, and enables them to organise them more effectively than by trying to make notes on paper.

Both programs allow the user to organise reports and research, create detailed reports and plans, and export them to Word.

Software for note-taking

Caption.Ed Pro

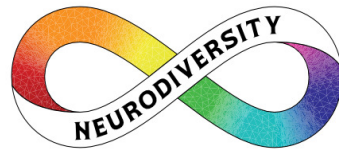
Many work interactions require the ability to process information, identify the important material and capture everything for review, often for an hour or more. This type of note-taking is particularly difficult and cognitively taxing for neurodiverse people.

Caption.Ed Pro provides high-quality automated captions for any live or pre-recorded media. It can be used online or in face-to-face meetings, conversations, and work events to capture the audio information. While captions are essential for some users, they are really useful for anyone, especially neurodivergent people.

Caption.Ed Pro generates live captions on Zoom, Microsoft Teams, YouTube, Blackboard, Panopto, Echo360 and other media. The captions are instant, and can be customised by the user. This will help users to process the information discussed or presented, and the captions themselves will make content more accessible.

Caption.Ed Pro can support neurodiverse people by providing a live transcript through which important information can be highlighted, and annotations added. This is all saved to be reviewed and revised at the person's convenience.

Caption.Ed Pro also generates full transcripts, which can be edited and exported into a range of formats.



Software for live group discussions and meetings

Braided Meetings

Braided Meetings are great for neurodivergent individuals and neurodiverse teams because:

1. Everybody gets a fair and equal opportunity to contribute
2. Effortlessly stick to the chosen topics
3. Automatically get a full written record

Traditional face-to-face or video meetings are optimised for neurotypical extroverts. Many other people find them challenging. Things like eye contact, being interrupted, moving off agenda, small talk, starting late, or over-running make the process painful to many, especially those who are neurodivergent or highly introverted. Braided Meetings is a new tool that helps everybody feel like they belong in a meeting, so all the good ideas emerge.

Braided Communications started life in Space. We invented a new communication tool called Space Braiding to solve a significant challenge for future human spaceflight – how will crew on future missions stay connected with family, friends and colleagues? Space Braiding is now proven in studies funded by the UK Space Agency, the European Space Agency and NASA. We used the same technology to build Braided Meetings and improve meetings for neurodiverse teams on Earth.



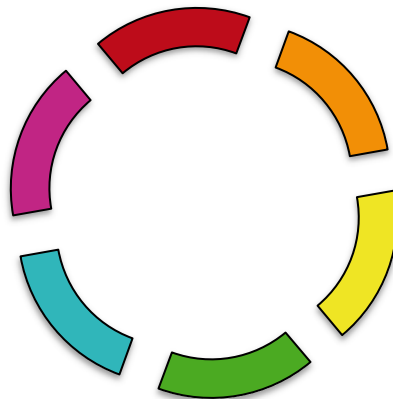


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Braided Meetings have one topic per Braid on a carousel that rotates virtually between participants who each type to add their thoughts. As the carousel rotates, it takes each topic from person to person so they can add their contributions, and the discussion develops. Many people can better express themselves in writing rather than in verbal language, given time to think before contributing, edit themselves and have predictability about the topics under discussion.

Braided Meetings bring those qualities to real-time live group discussions (meetings), helping the whole team communicate more precisely, calmer and more concisely.

Contact us to find out more about how NATTC works to support neurodiverse people in the workspace:



- **Access to Work Needs Assessment**
- **Workplace Needs and Progress Assessment**
- **Support for Applications for Access to Work Funding**
- **Sourcing and Installing Correctly Assistive Technology**
- **Expert Assistive Technology Training and Workplace Coaching**
- **Neurodiversity Awareness Training**

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Website: www.n-attc.co.uk