TRENDS AND INNOVATION WITHIN THE WORLD OF TECHNOLOGY FOR STUDENTS WITH SEN

Chris Carter

EdTech Adviser



CHRIS CARTER EDTECH ADVISER, HFL EDUCATION

- Google for Education Certified Trainer
- Apple Distinguished Educator
- Microsoft Educator Trainer 2023

25+ years' experience with education technology, including 6 years working in Special Schools for students with moderate to severe learning difficulties.



THIS SESSION:

1. EDTECH TOOLS FOR SUPPORTING STUDENTS WITH SEN:

- Immersive reader
- Microsoft Lens
- Read&Write Toolbar

2. DIGITAL SOCIAL STORIES™:

- Quick review of what they are
- Creating them on iPad, Android or online

3. INNOVATIONS – LOOKING TO THE FUTURE:

- Artificial Intelligence and social robotics

POLL

- What is the type of device you use most frequently when supporting students with SEN?
 - a) Apple (e.g. iPad)
 - b) Windows (e.g. laptop)
 - c) Android (e.g. phone)
 - d) Chrome O/S (e.g. Chromebook)

TRENDS IN TECHNOLOGY TO SUPPORT SEN LEARNERS

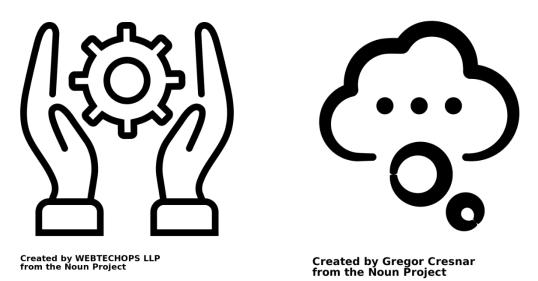
Mobile **Adaptive Assistive** Technology (with AI) **Technology Technology** Al Screen readers **Tablets** (Artificial Intelligence) Alternative input **Mobile Phones Social Robotics** Apps / AR / VR Personalised learning Speech recognition Cost | Availability 1 Eye tracking **Automated tutoring**

THE CONTINUED EVOLUTION OF EDUCATION TECHNOLOGY

 In the future we can expect see personal AI assistants that will support the learner on an individual basis and adapt to their particular needs.

TODAY'S SESSION

- Practical ideas you can take away and try
- Areas to think about and explore, for the future



1. SOME GREAT EDTECH TOOLS TO SUPPORT LEANERS WITH SEN

- Immersive Reader
- Microsoft Lens app
- Read&Write toolbar

IMMERSIVE READER

What is Immersive Reader?

Immersive Reader is a tool to increase readability of text in documents and websites. It can support students with dyslexia and dysgraphia.

It can also help students with visual impairments and be useful in many other situations where students struggle with accessing text.

IMMERSIVE READER

Immersive Reader can be used in Microsoft Office or through Office.com in a web browser on Windows/Macs.



Immersive Reader can be used via apps on iOS and Android tablets and phones, e.g., Microsoft Word or Microsoft Lens apps.











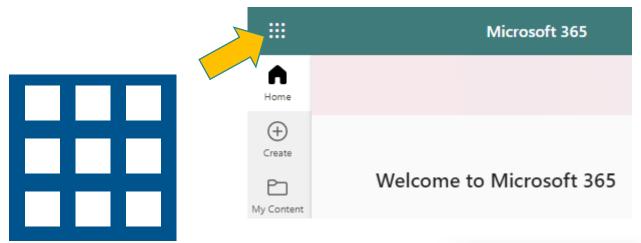








ACCESSING IMMERSIVE READER IN THE ONLINE VERSION OF OFFICE

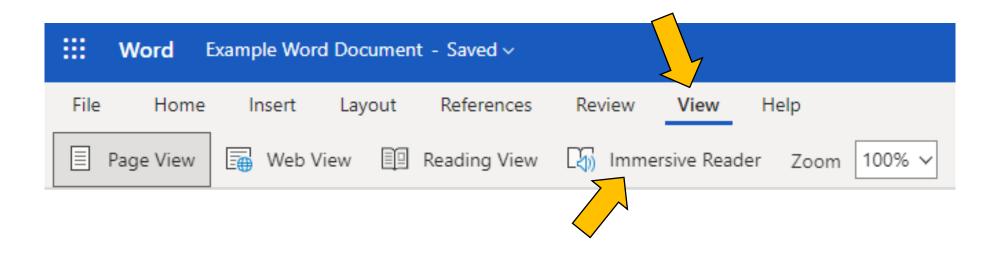


Free Microsoft account required

https://www.office.com/



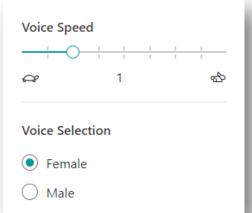
ACCESSING IMMERSIVE READER IN THE ONLINE VERSION OF WORD



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Example text: In a small village, on a small island, there lived a friendly robot called Buzzy. Buzzy loved to help everyone around. With its shiny metal body and kind smile, it quickly became a beloved member of the community. Buzzy would wake up at sunrise and deliver fresh bread to their neighbours. It could fix broken things and even tell fascinating stories. People adored Buzzy, as it spread joy wherever it went. And every night, as the village fell asleep, Buzzy would recharge its batteries, ready for another day of bringing happiness to everyone it met.





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Text size and spacing





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Text Size

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Increase Spacing

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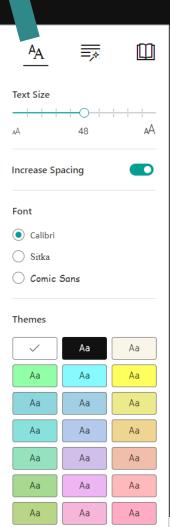
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Colour Themes







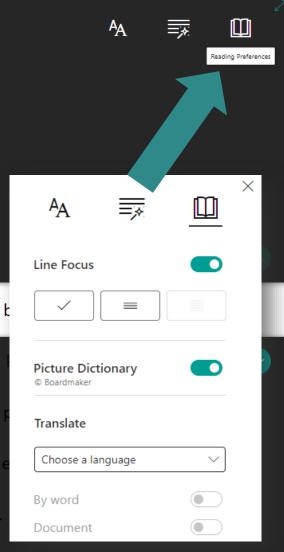
Line Focus

Example text: In a small village, on a small island, there lived a friendly rok

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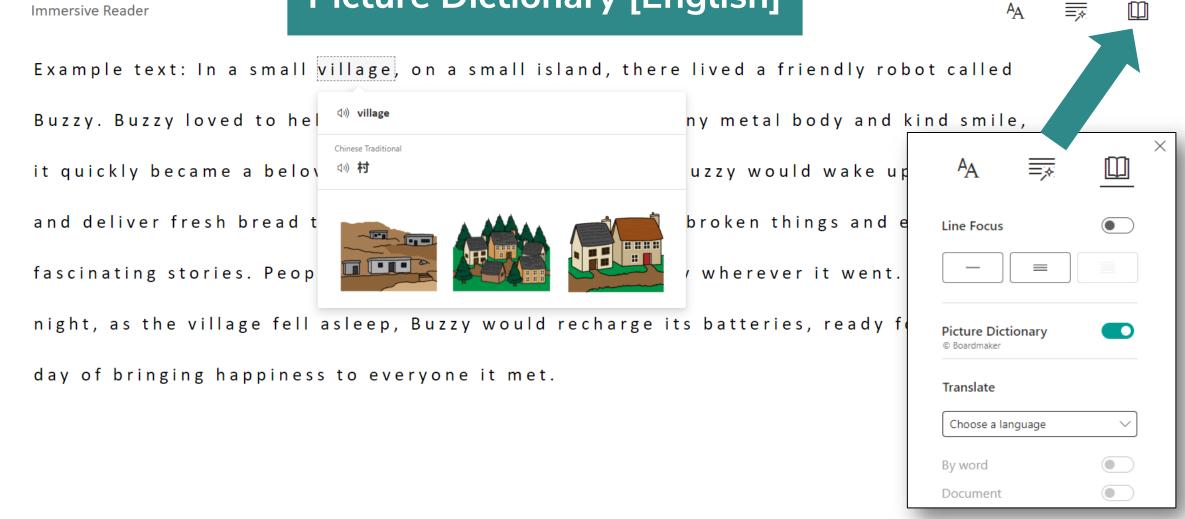






Immersive Reader

Picture Dictionary [English]



Syllables and Grammar [English]

Immersive Reader

Ex-am-ple text: In a small vil-lage, on a small is-land, there lived a friend-ly ro-bot called Buz·zy. Buz·zy loved to help e·ve·ry·one a·round. With its shi·ny met·al bod·y and kind smile, it quick·ly be·came a be·loved mem·ber of the com·mu·ni· $^{A}\!A$ wake up at sun rise and de liver fresh bread to their neigh bours. It Syl·la·bles things and e-ven tell fas-ci-na-ting sto-ries. Peo-ple a-dored Buz-zy, a wherever it went. And e-ve-ry night, as the vil-lage fell a-sleep, Buz Parts of Speech ■∨ nouns re-charge its bat-te-ries, read-y for a-noth-er day of bring-ing hap-pi- verbs it met. adjectives ■ ✓ adverbs Show labels

 A_A

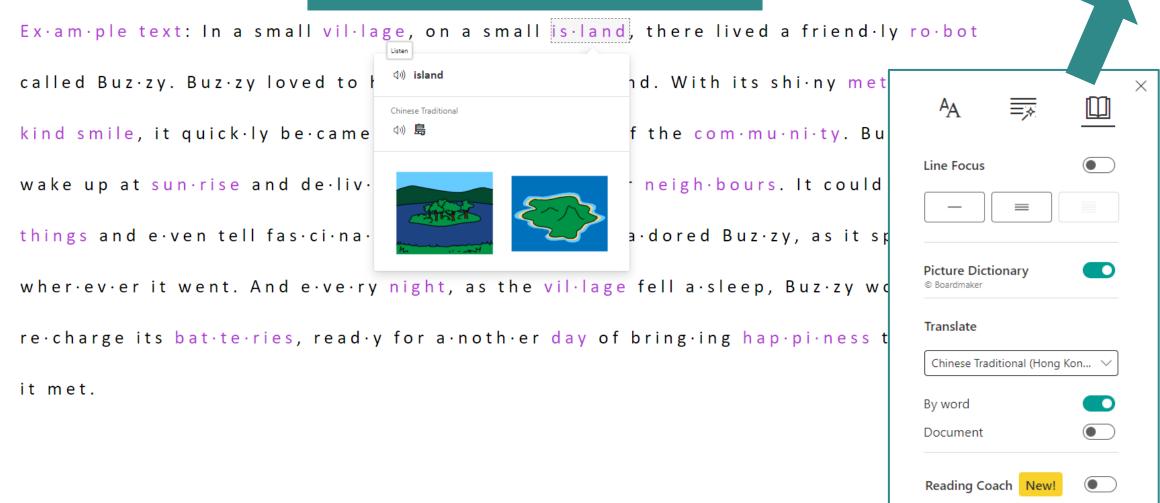
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Word or Document translation

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 A_A

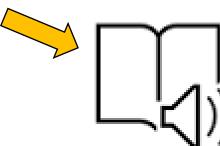


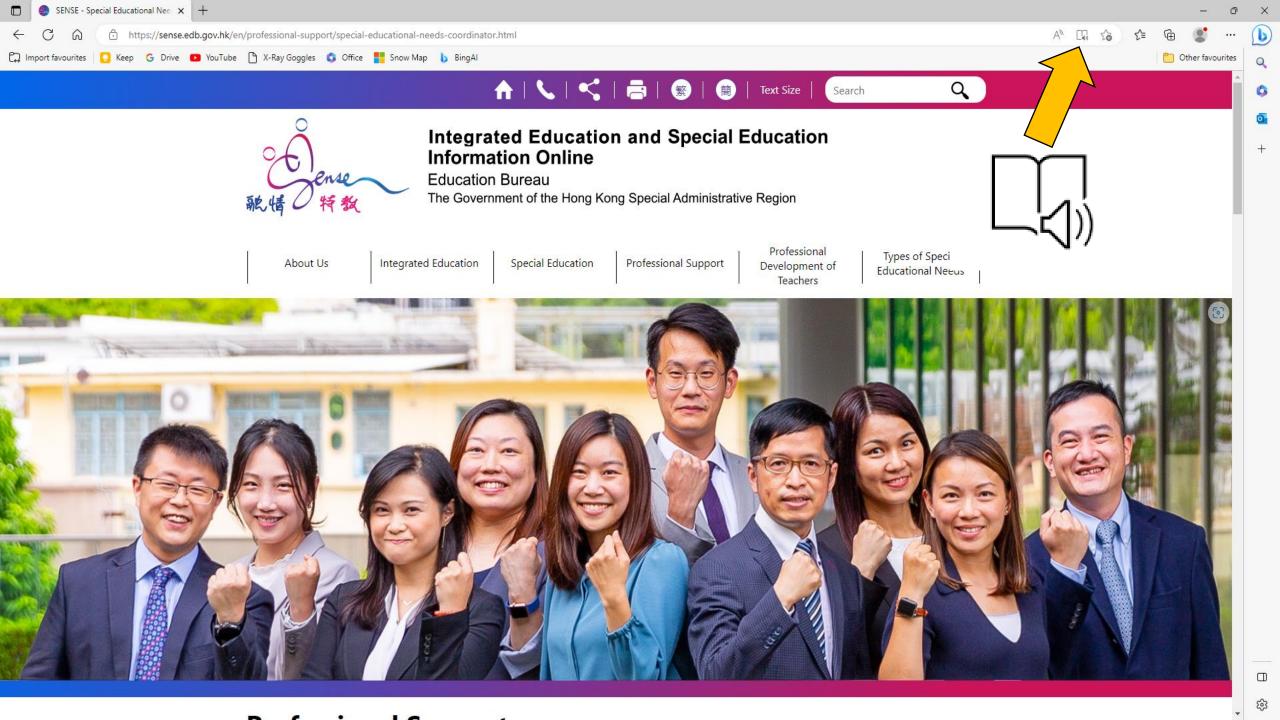


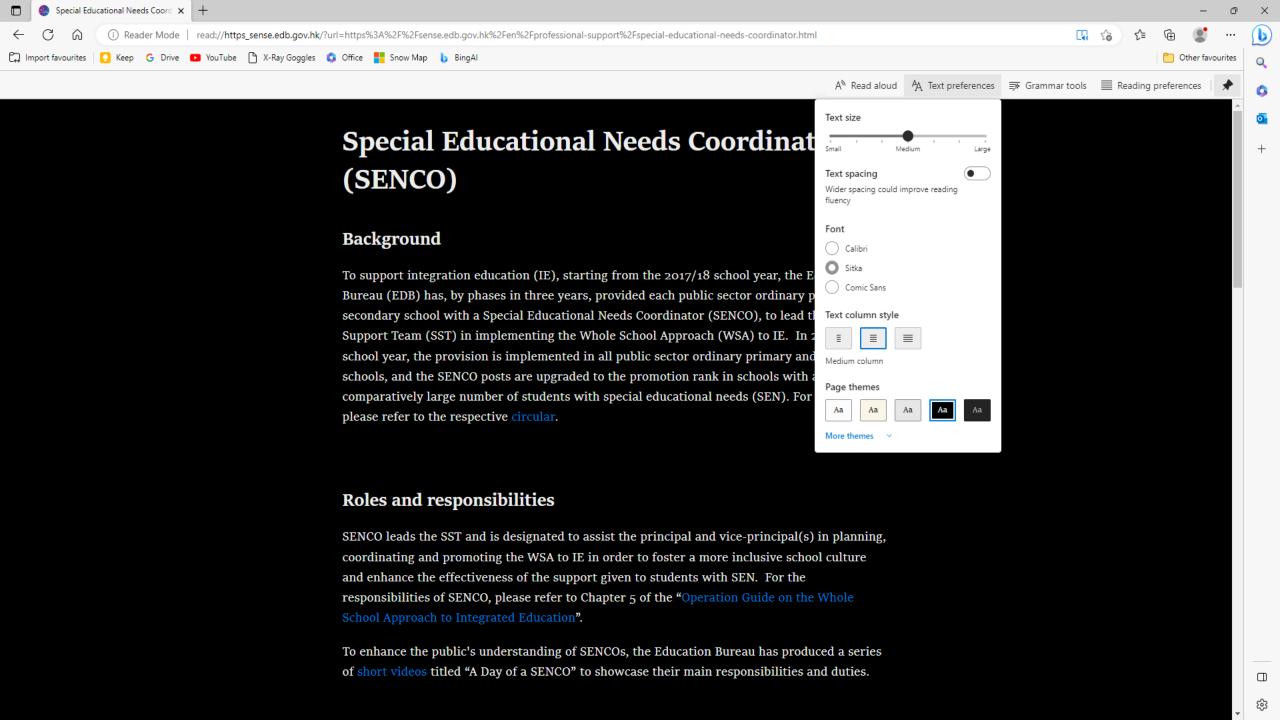
IMMERSIVE READER

Immersive Reader is also found in Microsoft Edge (browser) when available on a webpage.

Look for this icon to the right of the address bar.





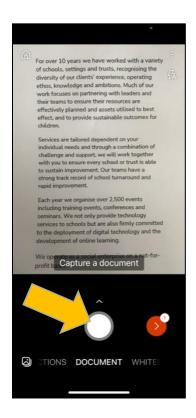




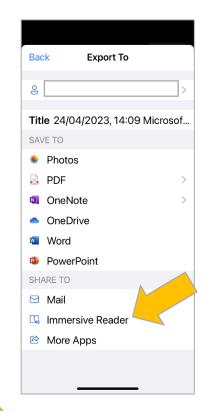
IMMERSIVE READER WITH MICROSOFT LENS

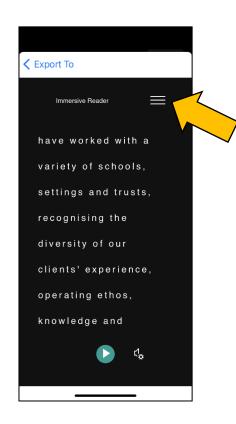


Use the Lens app on a phone or tablet to scan printed text, and then use Immersive Reader for accessibility.





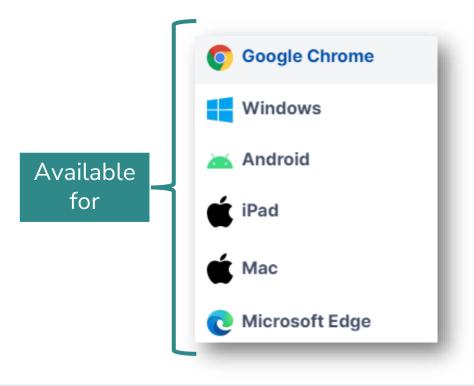




IMMERSIVE READER - SUMMARY

- Available in several Microsoft Office programs.
- Available in Office365 or online versions.
- The 'Lens' app enables it to be used with printed text.
- Provides a wide range of accessibility and literacysupport tools.

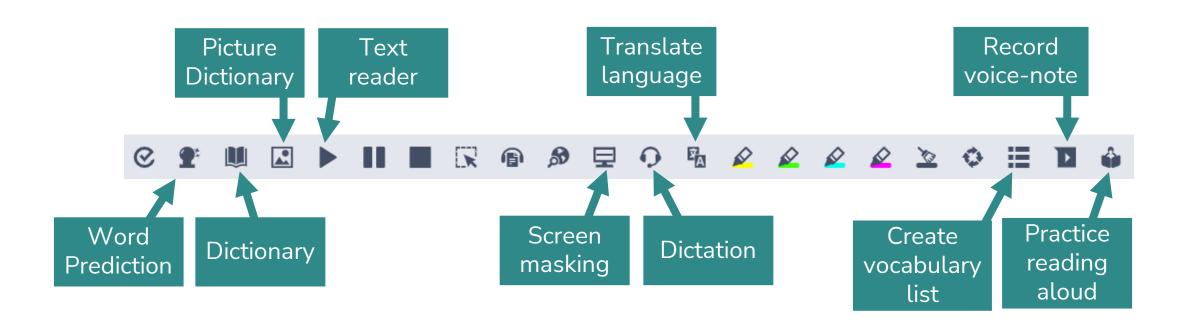
ACCESSIBILITY AND LITERACY SUPPORT – READ&WRITE



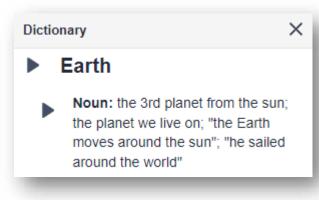


MOST FUNCTIONALITY FROM THIS TOOL WOULD BE WHEN YOU ARE WORKING IN ENGLISH.

ACCESSIBILITY AND LITERACY SUPPORT – READ&WRITE [From Texthelp]



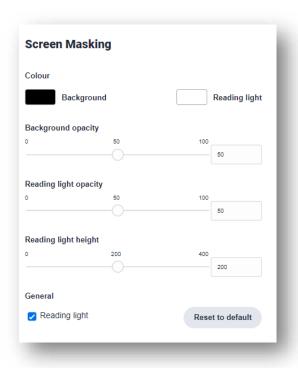
ACCESSIBILITY AND LITERACY SUPPORT – READ&WRITE [From Texhelp]

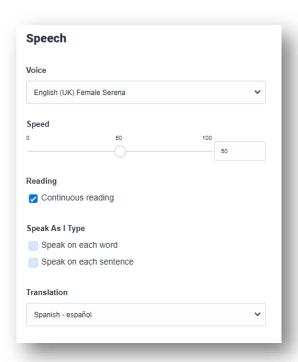


[English]



[English]





MOST FUNCTIONALITY FROM THIS TOOL WOULD BE IN ENGLISH.

2. DIGITAL SOCIAL STORIESTM

- Quick review of what they are
- Creating them on iPad, Android or online

DIGITAL SOCIAL STORIES TM

Social Stories are:

'Short descriptions of a particular situation, event or activity, which include specific information about what to expect in that situation and why'

(The National Autistic Society 2014)

How to write a social story

https://www.autism.org.uk/advice-and-guidance

SOCIAL STORIES:

- Are re-assuring at times of anxiety
- Provide a routine response to particular situations
- Are usually short and use simple language
- Give guidance and security in social situations
- Used over and over again, one at a time and then gradually phased out over time

SOCIAL STORIES COULD BE USED FOR A RANGE OF SITUATIONS, INCLUDING:

- Coping with changes to routine and unexpected / changed events (e.g. absence of teacher, room changes, different room layouts etc.)
- Self-care skills (e.g. washing hands, how to clean teeth or get dressed).
- Social skills (e.g. sharing, asking for help, saying thank you, interrupting).
- As a behavioural strategy (e.g. what to do when angry, how to cope with obsessions).

SOCIAL STORIES OFTEN FOLLOW THIS PATTERN:

Descriptive

Describes a situation.

Descriptive

Describes how the user responds to this situation

Perspective

Describes how others may feel about that response

Directive

Describes the response that is desired or helpful

Affirmative

(hopeful/encouraging)

Describes the positive outcome of the desired response

Asking Nicely

Descriptive

Descriptive

Perspective



Affirmative

Sometimes I forget to ask nicely.

I take things without asking.

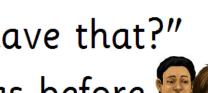
I must remember to ask nicely or people will be sad and think I am rude.

I can say things like, "Please could I have that?"

I can wait for people to give me things before

I take them.

When I ask nicely, people will want to help me.







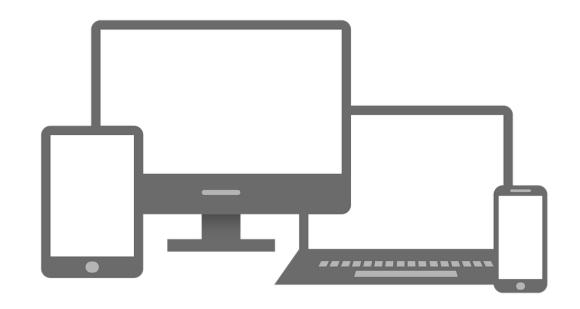
POLL

 Have you used social stories with any of the students you support?



WHY GO DIGITAL?

- Include photographs, sound recordings and videos of the <u>positive</u> parts of the story – aid understanding of the goal
- Personalise the story with real environments and people
- May be more engaging for the student to use
- Quick and easy to make with apps and the camera!



CASE STUDY

- Simon enjoyed school playtime but sometimes did not play nicely with other students. He could be too rough, and was not always good at sharing the outside play equipment (e.g. tricycles.)
 This could upset other students, and in turn upset Simon.
- A digital story was created on an iPad, for Simon to use before playtime each day.
- The story included video of Simon playing nicely and appropriately with his friends, using the outdoor equipment (captured on an iPad.)
- The story concluded with a video of Simon and his friends waving happily at the camera. [Affirmative ending].



GOING DIGITAL

iPad Apps



Social Story Creator and **Library**

Android Apps



Visual Schedules and Social Stories

Online Tools



Google Slides
[Part of Google Workspace]



Book Creator Online



Powerpoint Online

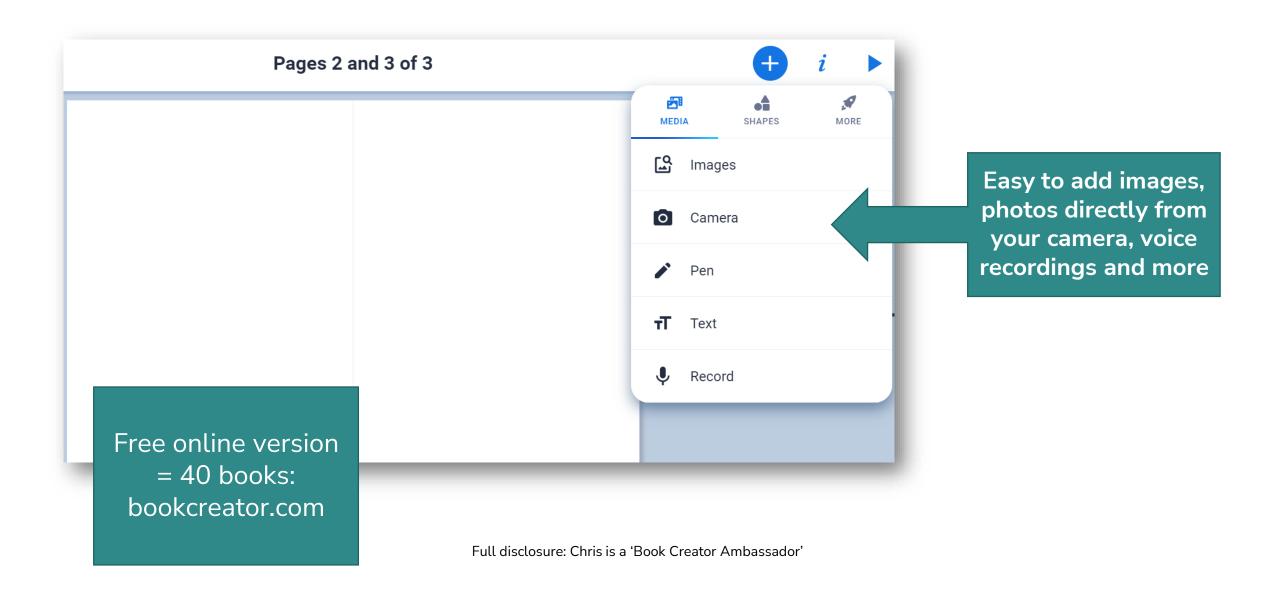


Book Creator



Little Story Creator

BOOK CREATOR (IPAD APP OR ONLINE VERSION)



SUMMARY: DIGITAL SOCIAL STORIES™

- Can support students through changes to routines and situations they find challenging.
- Using a digital story with photos and video, can make the story more personal, meaningful and engaging.
- Several apps available to help you create stories on a tablet, phone or other computer.

3. INNOVATIONS – LOOING TO THE FUTURE:

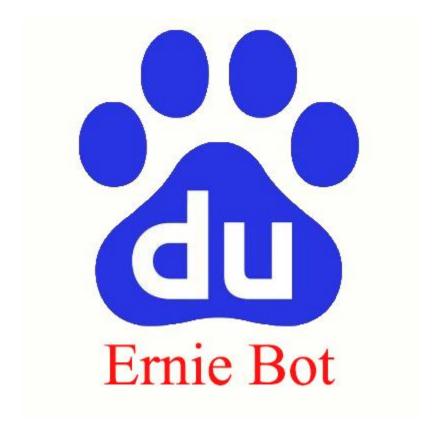
ARTIFICIAL INTELLIGENCE AND SOCIAL ROBOTICS

THE CONTINUED EVOLUTION OF EDUCATION TECHNOLOGY

- In the future we can expect see personal AI assistants that can:
 - Support the learner throughout the day.
 - Help with homework.
 - Remind them of tasks.

ARTIFICIAL INTELLIGENCE (AI)





ARTIFICIAL INTELLIGENCE (AI)

HOW CAN AI TOOLS HELP LEARNERS WITH SEN?

- Simplify texts. E.g., lower the reading age of a text.
- Summarise texts. E.g., bulleted list of key points.
- Support writing. E.g., Canva Magic Write, Google Docs (coming soon).
- Develop independent learning. E.g., Google Read Along or Microsoft Reading Coach.
- Help with homework etc.
- Adapt learning activities to meet to the needs of the learner.
- Create personalized reading passages based on words students find most challenging.
- Gamify activities to make them more engaging
- Automated tutoring (e.g., Khan Academy Khanmigo)
- Much more...

AI LEARNING ASSISTANTS



https://www.khanacademy.org/khan-labs

(Coming soon)

Example text – simplified with Al

Butterflies are fascinating creatures that bring joy and wonder to our world. They are insects with colourful wings that are covered in tiny scales. These scales give them their vibrant hues and patterns. Did you know that there are around 20,000 different species of butterflies in the world? That's a lot of variety!

Butterflies start their lives as tiny eggs, usually laid on the leaves of plants. From these eggs, caterpillars hatch out. Caterpillars are hungry little creatures that eat almost constantly. They grow rapidly and shed their skin several times as they get bigger. This process is called moulting. After the caterpillar has eaten enough and grown to its full size, it enters a stage called pupa or chrysalis. Inside the chrysalis, a remarkable transformation takes place. The caterpillar's body breaks down and rearranges itself into a butterfly. It's like a magical metamorphosis!

When the butterfly is ready to emerge, it breaks open the chrysalis and unfolds its wings. At first, its wings are soft and crumpled, but soon they expand and harden. Then, the butterfly pumps fluid into its wings, which helps them become strong and ready for flight. Butterflies have a special tongue called a proboscis. It looks like a long, straw-like tube and is used for sipping nectar from flowers. As they visit flowers, they unintentionally collect pollen on their bodies and carry it to other flowers. This process is called pollination and helps plants reproduce.

So, the next time you see a butterfly fluttering by, take a moment to appreciate its incredible journey from an egg to a beautiful, winged creature. They remind us of the wonders of nature and the amazing transformations that can happen in our own lives.

And remember that Immersive Reader could further aid access to the texts



Butterflies are colourful insects that go through an amazing transformation. They start as eggs, hatch into caterpillars, and eat a lot to grow. Then they become a pupa or chrysalis and change into butterflies. Their wings are soft at first but become strong for flying. Butterflies have a special straw-like tongue called a proboscis to drink nectar from flowers. They also help plants by carrying pollen as they move from flower to flower. It's like a magical journey from a tiny egg to a beautiful butterfly!

- Butterflies are insects with colourful wings covered in tiny scales.
- They undergo a remarkable transformation called metamorphosis.
- They start as eggs and hatch into caterpillars.
- Caterpillars eat a lot and shed their skin as they grow.
- After growing to their full size, they enter the pupa or chrysalis stage.
- Inside the chrysalis, their bodies transform into butterflies.
- When ready, butterflies break open the chrysalis and unfold their wings.
- They have a special tongue called a proboscis for sipping nectar from flowers.
- Butterflies unintentionally collect and carry pollen, helping plants reproduce.
- There are about 20,000 different species of butterflies in the world.



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Using AI to help adapt materials to meet the needs of the learners

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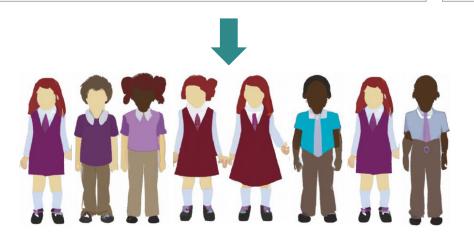
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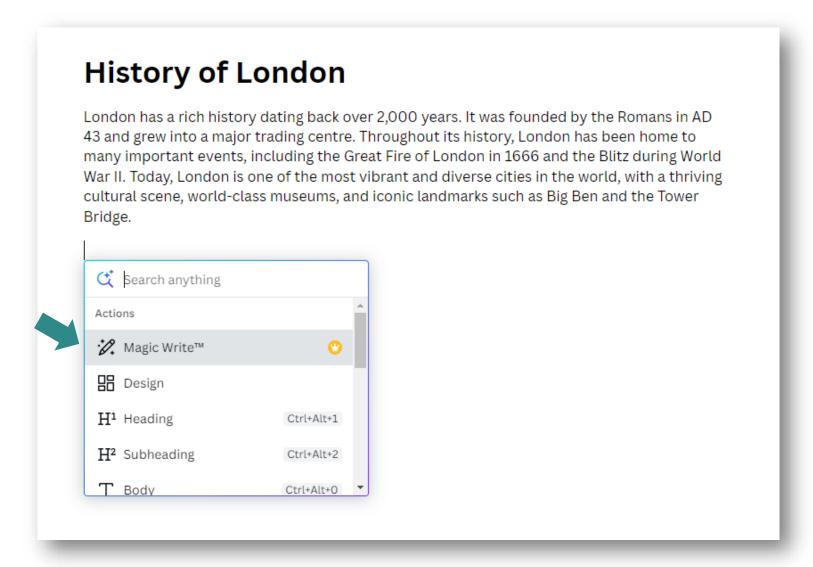
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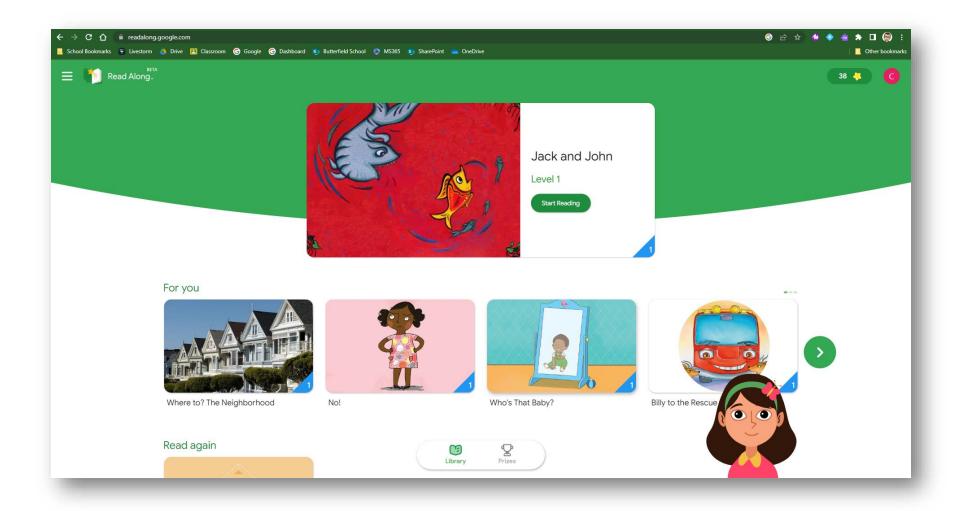


Example of writing support (E.g., Canva Magic Write)

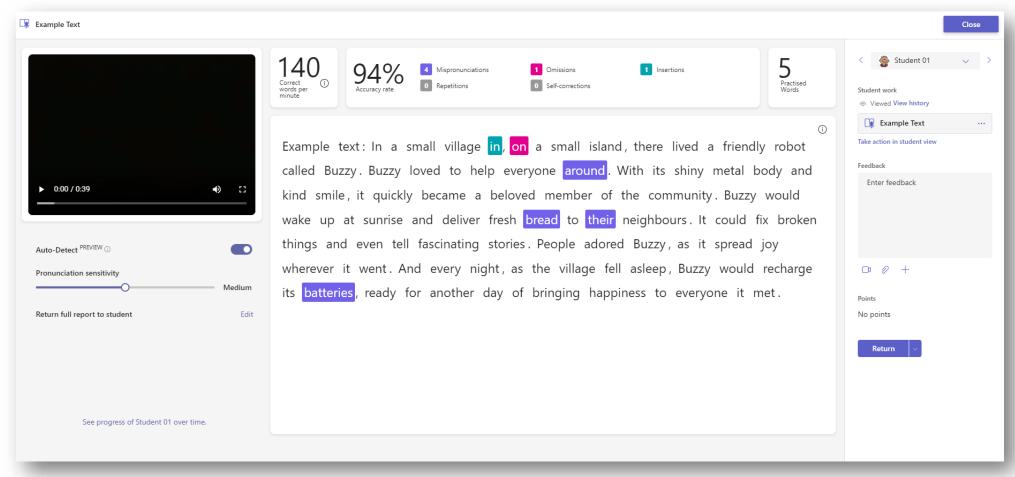


https://www.canva.com/ (web-based tool with apps for iOS and Android)

Example of [English] reading support (Google Read Along)



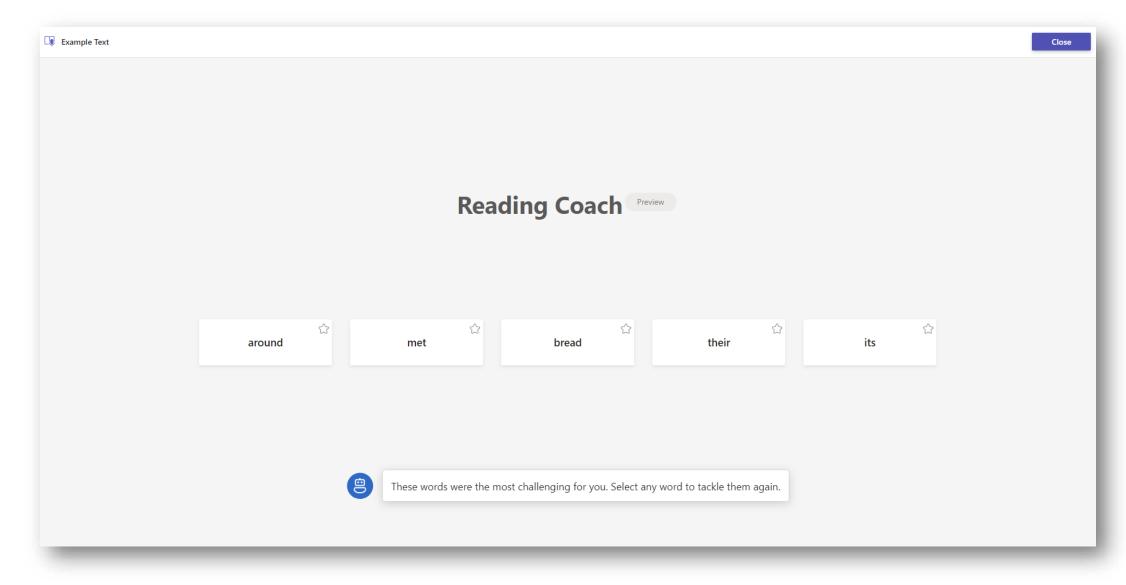
Example of reading support (Microsoft Reading Progress)



https://techcommunity.microsoft.com/t5/education-blog/introducing-reading-coachfor-personalized-practice-and-other/ba-p/3223533

Currently supported in Microsoft Teams on Windows, browser, Mac, iOS and Android.

Example of reading support (Microsoft Reading Coach)



SOCIAL ROBOTICS



EXAMPLE: BUDDY THE EMOTIONAL ROBOT

https://buddytherobot.com /

 An interactive, educational companion. Supports students with SEN to practice social, emotional and life skills.

SUMMARY: ARTIFICIAL INTELLIGENCE

- An emerging technology in education.
- Potential to provide individualised support for learners with SEN.
- Generative AI tools can already be used in many ways to help learners and their teachers.
- Many tools available now that have AI within them.

SOMETHING TO TRY

Trends and innovation within the world of technology for students with SEN

Something to try

 Download the Microsoft Lens app to a mobile phone or tablet. The app is freely available on the iOS App Store or Google Play Store.



Using the app, take a photo of a printed document or page in a book, then tap on 'Done'. Next, choose '*Immersive Reader*' from the 'Share to' menu. When Immersive Reader opens, explore the functions it offers. Think about how these may support any particular students you work with.

 Imagine a situation where a child you work with experiences challenges with a daily activity or routine.
 This may be, for example, playing nicely at play-time, dealing with the lunchtime routine or washing their hands.
 The activity causes the child anxiety, and they exhibit challenging behaviour as a result.



Create a digital story to support this child and help them adapt to this activity or routine, so that they do not find it as challenging. You could use an app designed for creating Social Stories™ such as Social Story Creator & Library, or you could use a creative app such as Book Creator or PowerPoint. Try to add some photos and/or videos of your own. (It is not important what they are as this is just a practice story.)

Try to follow this pattern in your story:



LINKS FROM TODAY'S PRESENTATION

- How to use Immersive Reader in Word: https://support.microsoft.com/en-gb/office/use-immersive-reader-in-word-a857949f-c91e-4c97-977c-a4efcaf9b3c1
- How to use Immersive Reader in Edge: https://support.microsoft.com/en-us/topic/use-immersive-reader-in-microsoft-edge-78a7a17d-52e1-47ee-b0ac-eff8539015e1
- Lens for iOS: https://support.microsoft.com/en-us/office/microsoft-lens-for-ios-fbdca5f4-1b1b-4391-a931-dc1c2582397b
- Lens for Android: https://play.google.com/store/apps/details?id=com.microsoft.office.officelens&hl=en_GB&gl=US
- Read&Write: https://www.texthelp.com/en-gb/products/read-and-write-education/
- Social Stories: https://carolgraysocialstories.com/social-stories/what-is-it/
- Canva (incl. Magic Write): https://www.canva.com/education/
- Google Read-Along: https://readalong.google.com/
- Microsoft Reading Progress: https://techcommunity.microsoft.com/t5/education-blog/introducing-reading-coach-for-personalized-practice-and-other/ba-p/3223533



TRENDS AND INNOVATION WITHIN THE WORLD OF TECHNOLOGY FOR STUDENTS WITH SEN

Chris Carter

EdTech Adviser





HFL Education is a leading national provider of school improvement and business support services, training, and resources, which enable schools, educational settings and multi-academy trusts to deliver a great education. We support those we work with to achieve successful long-term outcomes for their children. We believe that every young person, through access to a great education, should be able to realise their potential, regardless of where they live, their background or circumstances.

Learn more about us by visiting our website