



**National Star**

Realising the aspirations  
of people with disabilities



**StarTechnology**

# Assistive Technology Assessment

Clare Wright

5<sup>th</sup> December 2018

## Summary

Clare has a good understanding of using IT and will benefit from working on computers in education to speed up her input.

- Software with features such as **Dictation, Prediction** and **Speak-as-you-type** can help complete work quicker
- This will require providers to focus on **Provision of Resources** while ensuring they become the **usual way of working**.
- **A rollerball works well**, additional switches may improve ease of use.

*\*See section 6 and attached guides for further details\**



## Contents

Summary .....	1
1. Introduction: Our Service .....	3
2. Introduction: Assistive Technologist .....	4
3. Background: Individuals/Organisations involved.....	5
4. Background: Referral .....	5
5. Observation .....	6
6. Recommendations: Expanded Summary.....	8
Dictation.....	8
Text Prediction.....	9
Speak as you type .....	9
Posture.....	10
Provision of Resources.....	10
Switch for improved Pointer Control.....	10
7. Recommendations: Actions .....	11

## **1. Introduction: Our Service**

Star Technology is a service set up by National Star College in 2014 to raise the standards and awareness of Assistive Technology in a number of different environments.

During these years we have delivered assessments, training and consultation for schools, organisations and individuals. We have also collaborated on European projects and developed projects to help with Assistive Technology across the board.

### **We work with schools, colleges and training providers, delivering:**

#### **Assessments**

We assess individuals, groups and organisations, providing detailed and concise reports with our recommendations

#### **Training**

Tailored to suit requirements

#### **Advice, support and guidance**

Initial consultation is free, as everyone should have access to the technology they need

#### **Adaptations and modifications**

Personalised solutions

## 2. Introduction: Assistive Technologist



### **Neil Beck - Assistive Technologist.**

8 years in various roles at National Star.  
Experience and training in SLT, Education & Care.  
Experience working for the LIFT Programme  
Certified Dragon Naturally Speaking Trainer  
Certified Texthelp Read & Write Gold Trainer  
Worshipful Company of Educators Inspirational Educator Award winner  
2017

### **What is my role?**

I provide I.T. access and assistive technology for our students at National Star. We support staff to integrate assistive technology to improve sessions.

Externally I offer assistive technology services to organisations and individuals who may benefit from access to our range of expertise, equipment and software.

Outside of this work, I represent Natspec as an Assistive Technologist, which involves working with specialist colleges and centres across the country.

### **What is an Assistive Technology Review?**

This assessment includes a review case history, a 1:1 assessment with our Assistive Technologist and a summary report. The Assistive Technology Assessor can arrange for follow-up visits or other contact to ensure the implementation of a successful solution.

### **How to use this report?**

The front page gives an overview of the recommendations based on the assessment. For further details the observation, expanded summary and actions sections give a comprehensive view of the assessment.

### **3. Background: Individuals/Organisations involved**

**Linda Wright** – Clare’s Mother

**Sarah Lanham** – Additional Learning Needs Officer

**Caroline Parker** – NHS Occupational Therapist

**Neil Beck** – Assistive Technologist (National Star)

**Maciej Machowiak** – Assistive Technology Facilitator (National Star)

### **4. Background: Referral**

Clare is a determined young lady with lots of interest and hobbies including a passion for technology. She would like to be as independent as possible.

Clare currently is educated at home by her assigned form council tutor and awaiting placement for her new school.

Clare’s mum noticed that Clare had been struggling to access some educational activities with her peers. She thought that access to Assistive Technology would be beneficial.

After an exchange of emails with Clare’s mum and other professionals involved with Clare’s case, there was an agreement for an assessment to take place on the 5<sup>th</sup> of December 2018 at home. NHS Occupational Therapist Caroline was unable to attend but wished to be kept informed of the outcome.

## 5. Observation

### Assessment: 5<sup>th</sup> December 2018

On arrival, we were invited to the downstairs room where Clare was already sitting at the table doing Arts and Crafts.

After an introduction, we engaged with Clare in conversation about her likes and dislikes and how she was doing at school. Clare seems to have a positive attitude towards her access and decided to show us what she can do. Clare mentioned, with mum confirming, that she found it difficult to operate some of the standard equipment i.e. mouse, touch pad, keyboard due to physical abilities.

Mum mentioned that she is worried about Clare's slow typing speed. Mum said there were situations that, due to the speed of her typing, Clare had not been able to express her answers fully, even when she knew the correct answer. Mum believes that Clare has the knowledge but it is sometimes hard to present it.

At the beginning of the assessment, Clare was asked to show us what she is using computers for at the moment. Clare replied that she likes to go on websites to play games or do some art and enjoys playing Minecraft. Clare uses either a laptop or an iPad as the families main PC is situated upstairs and Clare's access would be limited.

Clare decided to show us her favourite website (CBBC) for games and art activities. It was clear from the very beginning that Clare is most comfortable with direct input (touchscreen) on tablets or arrow keys on the keyboard while navigating around devices. When asked what pointer control she uses Clare showed her mouse trackball. Clare was using her whole hand to operate the rollerball and due to accuracy problems she quickly migrated to using arrow keys for finer control. Clare tried different set ups for her rollerball, including plug-in switches. Different sizes of switches were tested but Clare seemed to be most comfortable with a small switch positioned on the left side of the rollerball case. Clare was shown how she could use the blue lock button on her rollerball to drag-and-drop. Clare picked up quickly on her new mouse set up and choose the most comfortable position: with right hand fingers on the control ball and using her left hand to press the switch. In future this could be attached with Velcro.

Clare recently has been using a “Maxim compact mini” keyboard with key guard to help her accurately hit letter keys. Big keys keyboards have been tried before but Clare found it too big to type on it. During the visit Clare typed using one finger from her right hand to press each key on her keyboard. She did it accurately but slowly. Clare understands capital letters and knows how to use Caps Lock and how to apply that in a word processor. She can also find positions of each letter on the keyboard without any difficulties. Following that Clare tried a screen reader and text prediction functions to see if that could speed up her text input. First the “speak as you type” function of Claro software was tested where Clare could hear what she typed each time she pressed spacebar. Clare seemed to like that she could notice typing errors quicker and while still typing. Another feature tried was text prediction. Clare picked up the idea of predictive typing by word and seemed to get comfortable quickly with using function keys to input text prediction to her typed work.

To see if she could speed up her text input different options for dictation and voice control were demonstrated. Initially the Google Doc’s in-built feature of voice typing was tested as Dragon Naturally Speaking has complex commands and requires training. Clare interacted with voice typing well and the software recorded her voice with good accuracy. Some additional features were explained as well as techniques of how to use dictation effectively. When asked at the end Clare said that this had been the best part for her from today’s assessment and that she had previously used her voice to control Alexa.

With hand held devices i.e. iPads Clare seems to have less problems with access. She used touch accurately with her right hand and knows differences between tap, pinch and swipe control. She could use these basic commands comfortable and showed good accuracy on the screen.

iPads are used in school so time was taken to talk through and demonstrate accessibility features including dictation.

Windows “Hello” facial recognition log in worked well with Clare and she clearly enjoyed this. The assessment finished by discussing and showing the new “Immersive Reader” in Microsoft Word which could benefit Clare in future due to its wide adoption.

## 6. Recommendations: Expanded Summary

### Dictation

This can be used to write using Clare's voice. She thought it was the most useful tool during the assessment. Clare was accurate and with practice this will improve further. The main three options are Google Docs, Dragon Naturally Speaking and the built in "Dictate" function in Microsoft Word.

#### 1. Google Docs

To access Google Docs Clare will need access to a Google account, you can register for one of these here: <https://accounts.google.com/SignUp?hl=en>

When documents are created in Google Docs they are automatically saved as changes are made and are accessible on any computer connected to the internet. It is important that this is opened in Google Chrome as programmes such as Internet Explorer will not allow the dictation functionality. Functions such as "comma" and "new line" work but often students find that it will write those words out instead of following the command.

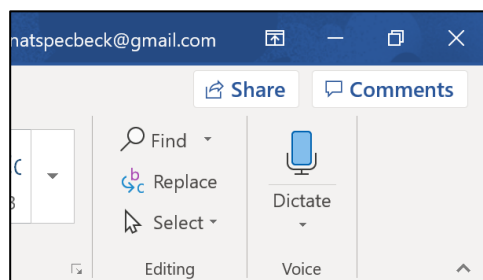
A separate guide for this process has been created and attached along with the report.

#### 2. Dragon Naturally Speaking

Quite complex in use and for time being may be too complex for Clare but it is worth having it in mind for further education.

#### 3. Microsoft Word: In-built

Fairly recent but effective, it comes as an in-built feature with new Microsoft office packs. Works similar to Google Docs:





## Headset for dictation

When choosing a headset for any of these methods it is important to purchase a good quality, USB, noise cancelling headset. It will improve accuracy and can be used in surprisingly noisy environments. These are examples of some that we have used with students:

Single Earpiece: <https://goo.gl/P893kR>

Stereo Earpiece: <https://goo.gl/8YjqDw>

Additional (Untested but well rated and lower cost): <https://goo.gl/EEjB1p>

## Text Prediction

There are custom built tools to help with typing. A useful feature in these is the ability to build custom dictionaries – these can be built by teachers or by Clare’s previous work to ensure that suggestions are accurate and helpful.

### Lightkey

Only recently tested this but have been impressed by the performance and useability of this. Free for the basic version and the features are that comprehensive I doubt you will need the business version.

Video: <https://bit.ly/2QwchPR>

Free version: <https://bit.ly/2GfJf2f>

### Claroread / Read & Write

These have a good prediction function with custom dictionaries and the advantage of a complete suite of tools. Free trials are available, suppliers can be contacted and give good levels of support.

Claroread: <https://bit.ly/2ULENeR>

(Excl. VAT: £129)

Read & Write: <https://bit.ly/2LgPYHW>

(Excl. VAT: £320)

## Speak as you type

This tool reads out text as it is written giving you a reassurance that spelling and grammar are correct as you are writing. This is included in Read and Write/Claro (see above in Prediction)

## Switch for improved Pointer Control

A small plug-in switch for Clare's Rollerball will make it easier to navigate. The switch should be in a comfortable position so it's accessible with the left hand while the right operates the mouse rollerball.

There are different types of switch available but a small switch with a diameter not bigger than 50mm will likely work best and can be mounted with Velcro to the side of the rollerball case.

### Switches:

Piko Button 30: <https://bit.ly/2LupnY3>  
(Excl. VAT: £52)

Piko Button 50: <https://bit.ly/2rOBxCOR>  
(Excl. VAT: £52)

## Provision of Resources

Many of the tools mentioned in this report rely on being able to use digital tools. This should be the usual way of working, meaning that educational staff working with Clare should provide resources in a digital format. This can be by emailing work, using online platforms or shared folders.

## Posture

When working on a computer it is important to have the mouse/keyboard at elbow height, the top of the monitor at eye-level, comfortable spinal position and legs supported without being squashed. This has an impact on fatigue, concentration and accuracy so should always be considered.

## 7. Recommendations: Actions

### StarTechnology

#### Within scope of assessment:

- To advise and support the implementation of the suggestions given.
- To reply to query emails from those working with him to assist with the recommendations.
- To follow up once recommendations are in place and, if necessary, to review.

#### Future Development Opportunities:

- To support, should further training be required for any of the software discussed.

### Schools/Colleges/Professionals

#### Within scope of assessment:

- To consider the options available, to trial when appropriate and to put in suitable solutions when possible
- To keep Assistive Technologist updated with any changes and progress

#### Future Development Opportunities:

- Disseminating this information to any other relevant parties, e.g. future education providers

### Family

#### Within scope of assessment:

- To try any apps or settings they feel will be beneficial
- To keep Assistive Technologist updated with any changes and progress

#### Future Development Opportunities:

- As Clare's needs change as she gets older there may be additional skills that can be improved using technology.

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Thank you to all parties involved in producing this assessment; I hope it helps Clare to progress in education and other areas of her life.

To get in touch with Neil Beck, our Assistive Technologist, or to find out more about assistive technology call on **01242 534941**, email

[AT@startechnology.org.uk](mailto:AT@startechnology.org.uk), or visit our website at [www.startechnology.org.uk](http://www.startechnology.org.uk)