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# Year 2: Continuation of the Study of a 9-year-old child with dyslexic tendencies - the C-Pen ReaderPen for every day classroom-based work

*Assistive technology and dyslexic primary aged children*

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## ABSTRACT

Three children in every classroom struggle with dyslexia (The Driver Youth Trust, 2018). Non-identification of dyslexia is cited as a reason why some children commence secondary school with a basic reading ability (Dyslexia-SpLD Trust, 2018). Since 2016 we have followed a child who received an early diagnosis of dyslexia and has use of assistive technology to support her reading journey (Franklin et al., 2017). Subsequently the information we have gathered in the academic year 2017-18, has enabled us to compare her current data with that of children who are not identified early. In this article, we combine discussion and considerations as to the importance of early identification regarding the importance of diminishing the difference between dyslexic and non-dyslexic readers. This discussion is set in the context of work with assistive technology, namely the C-Pen ReaderPen, which has been utilised in conjunction with commonly used programs and tools to support the child's learning.

## INTRODUCTION

In the early part of 2016 a primary aged student, Hester\*\*, undertook the DST-J (2004) screening due to significant difficulties with reading and spelling. She demonstrated six signs of dyslexia and therefore her school introduced standardised practices to support her disability. Hester's parents also provided the school with a C-Pen ReaderPen, hoping assistive technology could be incorporated alongside other strategies to support their child.

During the Autumn of 2016 the ReaderPen Study Team became aware of Hester using the ReaderPen and a long-term collaborative study was established, working with the school to gain insight and understanding of the use of assistive technology within the primary classroom setting. (Franklin et al., 2017).

During the first year of study Hester gained confidence through the knowledge and support of her dyslexic confident Year 3 teacher (BC). 84% of teachers have informed the Driver Youth Trust (2014) that while they feel it is important to be trained in how to teach children with dyslexia, they currently lack sufficient training and feel they are failing these children. Hester's Year 4 teacher (AG), may have felt she did not have enough knowledge of dyslexia; however, she was enthusiastic and willing to use her teaching knowledge and insight to identify Hester's learning styles, her abilities and use of this information enabled her to set encouraging learning challenges.

This second year's study focused on the use of the other functions available on the ReaderPen. Hester and her previous teacher (BC), had worked together to build confidence in Hester to reach for the pen when she was unable to read or decode a word; often prompted; creating a habitual behaviour. However, the strategies now required specific guidance as to when and how the pen should be used when accessing written text outside specific reading time. Therefore, the focus was to promote Hester's independent learning, practicing keeping on task; to enable her to keep

up with peers; to use the pen in other lessons; widening the identity of the pen by using it to record ideas and concepts for creative writing; and using it for pronunciation support for spelling tasks. We also wished to promote and support the teacher's (AG) own desire to further her knowledge of dyslexia.

**The research question: How can assistive technology, the C-Pen ReaderPen, diminish the growing evidenced difference between children who have no reading difficulties and children with reading difficulties such as dyslexia?**

## **METHOD**

The C-Pen ReaderPen is a portable device which 'scans' text and reads the word or line of text back to the user. The user can attach headphones. The ReaderPen has several functions such as a dictionary, audio recorder and can also scan text to a computer directly onto a document onscreen.

Time was spent with Hester's new teacher (AG) to ensure she felt comfortable with the functions of the pen. The team discussed the implementation of the pen within the classroom environment, requesting AG discussed her concepts of lesson plans, teaching strategies and ideas for making use of the ReaderPen which not only supported Hester but also promoted independent learning.

Hester was nine years of age soon after the start of this second-year study. Her reading abilities at the start Year 4 stood at Year 1 'secure' level and her writing abilities were Year 1 'developing' level; therefore, her reading and writing skills were two academic years below her peers. Her school attendance rate was 97.7%. She lived with four older siblings, both her parents worked as full-time professionals. Her demographic group was white British Christian.

The school use a variety of techniques when working with dyslexic children, including:

- Toe by Toe – decoding and fluency.
- Phonics – Bug Club, Letters and Sounds.
- Sight learning words, including use of multi-sensory activities
- Personalised spellings
- Accelerated reading programme
- Coloured reading guides, page covers, reading rulers
- Dragon software

Hester's parents were encouraged with the impact of the ReaderPen during Year 3, and they concluded the pen was a positive tool for their child, so they were pleased with the support the school offered to their daughter. They were keen to continue supporting the use of the

ReaderPen deciding that the pen would not to be used at home during 'reading' sessions but would be available to Hester for homework involving large bodies of text.

The parent's concepts were shared with AG, and the team were pleased to hear the same strategies were already in place within school. Subsequently, the following implementation guide was put into practice to undertake the gathering of data to support or reject the hypothesis:

- Encourage and promote daily use of the pen.
- The ReaderPen not to be used during reading time or reading sessions when the material was suited to Hester's individual reading abilities.
- Promote and encourage independence, to keep the ReaderPen accessible to act as a visual prompt for Hester to use when required.
- Hester had developed a habitual behaviour using other strategies to read a word before reaching for the ReaderPen; this would be monitored to ensure continuance of imbedding core reading requirements.
- Promoting and encouraging use of alternative text mediums, such as computers, by developing and encouraging other reading techniques, e.g. text-to-speech software. This was important since Hester had begun to report she could not read text on screens, because she was unable to use the Reader Pen.
- Sharing of skills – Hester had identified a few peers who were having difficulties and shared her knowledge with these children. Hester showed these children how to use the school's ReaderPen and together they discussed this. Hester would benefit from sharing her knowledge with other peers.
- AG would work actively to ensure difference in ability gaps did not become wider, due to Hester's self-esteem difficulties, by promoting and encouraging Hester's knowledge and skills.
- AG would implement the use of the ReaderPen audio recorder to help Hester remember her ideas, keep on task, aid pronunciation and assist with spelling.

## RESULTS

Hester commenced her Year 4 education two years below that of her average peer.

The following scoring system is used on Hester's end of Year 4 report:

Attitude and effort:

- 1 = needs staff support and reminders
- 2 = sometimes good attitude and effort
- 3 = has a good attitude and tries hard
- 4 = excellent attitude and effort always

Progress:

- 1 = requires significant support
- 2 = progressing with some support
- 3 = progressing well in most work
- 4 = progressing very well

Attainment:

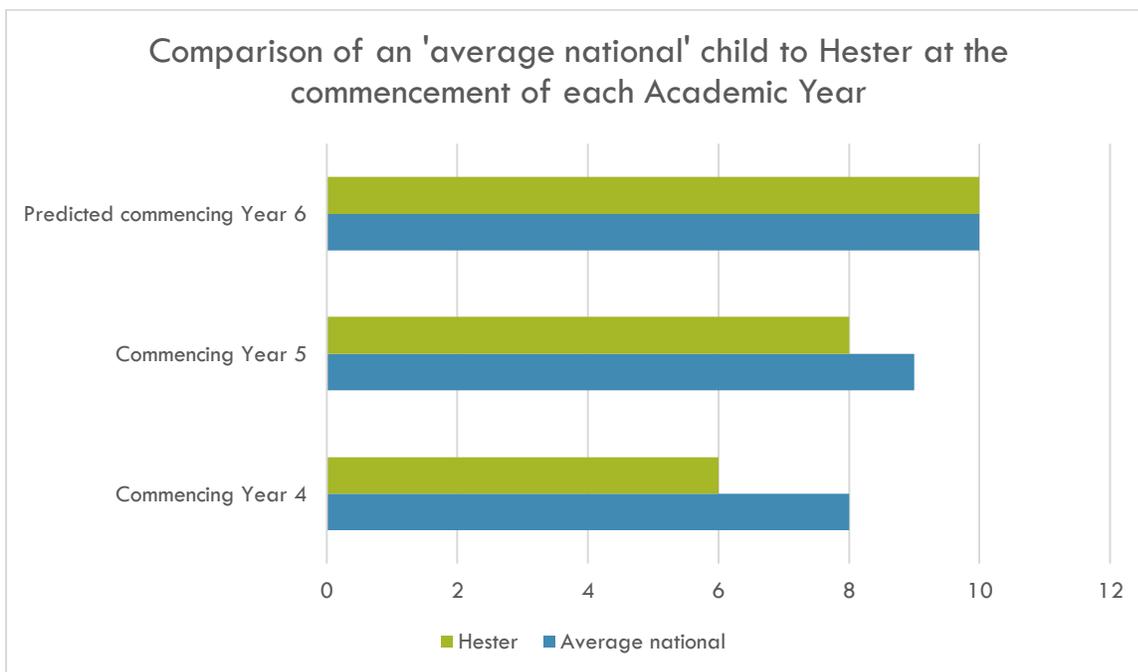
- 1 = Working below national average
- 2 = Working broadly in line with national average
- 3 = Working above national average

Table 1: Progress and achievement during school year 2017-18

Subject	Attitude and Effort	Progress	Attainment
English – Reading	3	2	1
English – Writing	3	2	1
Mathematics	3	2	1
Science, Computing, Topic (History, Geography, Art, DT)	4	3	
Music, RE, PE, PSHCE	4	4	

Hester had improved in her English Reading and Writing; by one point. At the end of Year 4 we find her attainment was classed as below the national average, however she is now working at the average abilities of a Year 3 student in both disciplines. Consequently, she had within one academic year increased her abilities by two years. Continued support within the forthcoming year could potentially lead to her achieving the national average requirements as that of her peers by the end of Year 5.

Table 2: Graph to demonstrate the differentiation between the average reader and our dyslexic participant with consideration of the impact achieved due to positive interventions and increased knowledge of her teachers.



The end of year report summarized observations on Hester’s learning with the ReaderPen:

**“Autumn Term** – the focus is to use the pen when reading and the pen’s ability to validate words or sentences as opposed to awaiting an adult to interject; enabling Hester to keep up with her peers in lessons. Hester stated:

“I feel I can read more tricky books”.’.

**Early Spring** - Hester is reaching for her ReaderPen with little or no prompt. She is developing a habit of making use of the pen as a normal way of working; with this increased confidence in her pen she introduced the ReaderPen to another pupil, leading to discussion about the pen and its benefits, keeping them both on task. This child was identified as having a SpLd (specific learning difficulty)”.’.

Hester felt nervous using the voice recorder, therefore AG had taken to using the audio recorder to record Hester's ideas, in turn this modelled correct pronunciation which aided Hester to produce more accurate spellings. Consideration is required to understand the confidence the child may display and the actual abilities of the child, the study team had insisted the child used the audio recorder feeling she was ready to do so, whereas the teacher knowledge of the child was imperative to ensure the child was not overwhelmed. The study team acknowledged the teacher was best placed to determine changes of approach and readiness to attempt new strategies.

The end of year report continued:

**“Second Spring Term** - AG to encourage Hester to use the pen in other lessons, such as Maths and Topic, therefore reducing her reliance on others reading for her. Hester particularly enjoyed these lessons and she was able to engage independently, showing her best effort and abilities. Her progress at this point is noted to be ‘slow but steady’. However, her increased confidence was noticeable, she demonstrated the use of the pen to another student in her class”.

The use of a dictionary was becoming an important aspect of learning in this term; however, Hester found the dictionary facility on the pen “confusing” and she was put off due to the complexities, explaining this difficulty due to the pen having “lots of explanations”. The study team noted the Collins dictionary available on the ReaderPen was complex and not suitable for those with reading difficulties.

The end of year report continued:

**“First Summer Term** - Hester no longer requires a prompt when using the pen in English, additionally she has begun to develop the habit of using the pen in other subjects”.

AG recognised a teaching need that she had not considered, she informed the study team of positive fonts and use of coloured paper which suited Hester's needs. This enabled Hester to partake in heavier reading activities; such as that undertaken for the Ancient Egyptian topic. Hester managed independently in these lessons using specially prepared paperwork and the ReaderPen, as opposed to turning to her peers, a strategy she had used in the past; the study team and AG felt this provided evidence to support an achievement of independent learning.

Hester had shown some uncertainty regarding the recording of her own voice and playing this back to herself in class. Nonetheless, she developed a technique of stepping out of the class to record herself, which alleviated the background noise and on returning to the classroom showed greater confidence in listening back to her own voice; she was encouraged by her peers who commented on the helpfulness of the ReaderPen to record ideas and discussion. Her peers wished to “have a go” and therefore AG suggested Hester interviewed her classmates using her pen. Additionally, Hester took it upon herself to ask her friends to help her prepare for a voice-over

she had been asked to do, which she proudly show-cased to visiting parents at an open event. Hester stated:

“My teacher said I am more confident using the recorder on the pen and this is very good”.’.

The end of year report concluded:

“**Last Summer Term** - Hester is developing positive strategies to reach for her pen in her other lessons with little prompting. The ReaderPen is having a positive impact on Hester in all her lessons, particularly Maths where she is showing great potential but struggles with the difficulties of reading worded questions”.

AG identified how important the sharing of strategies would promote success with Hester’s new teacher (DH) and the teaching assistants within her future classes.

Hester’s knowledge of her difficulties with reading had, in the past, held her back and sometimes resulted in her being a reluctant learner. However, maturity and the understanding of others having difficulties enabled Hester to recognise she could be turned to for support. AG explained Hester was in the unique position of having her own ReaderPen which in turn had encouraged and promoted self-belief, she was now seen to have a ‘can do’ attitude.

This attitude had led to her seeking to use other functions of the pen; unfortunately, the Collins English Dictionary had proven too complex for Hester. Students in Key Stage 2 are encouraged and expected to use dictionaries to check definitions for themselves. The advent of introducing the Oxford junior dictionary to the ReaderPen prompted AG to express excitement at this development as it would:

“(be) at the child’s fingertips... making it so much quicker and easier (and take out the stress) for the children with dyslexic tendencies”.

Finally, AG was asked about her experiences of supporting a dyslexic with assistive technology and the impact of introducing this into a classroom, to develop habitual behaviours and alleviate stigma,

“I would love to develop my understanding of using the pen, so I can help other students in my classes. I really enjoyed using the recording function of the pen and would love to develop this further with other children with SEN as well as the reader function ...”.

“Making it (recording ideas and concepts) part of all the children’s habits in class will certainly help Hester to feel less self-conscious.”

Hester showed a marked improvement during this school year in both her attitude and the confidence she brought to her learning. She undertook two years of work during Year 4, a time when speed reading and the use of a dictionary became particularly important. This progress

could enable her, if accompanied by consistent effort, to be on par with her peers when leaving primary school (Year 6).

In 2017 the number of Year 6 leavers who failed to achieve literacy level enabling them to access secondary education stood at 39% (Weale, 2017). However, this figure is from those who physically undertook the SATs test, there will be a percentage of Year 6 children who do not undertake a SATs test for several reasons, including parental withdrawal of their child from the school at the time of the SATs test (Busby, 2018). Around 44% of secondary aged children do not reach national average results and 1 in 20 adults have the literacy levels of a 5-year-old (RT UK, 2016).

## DISCUSSION

This year the Study has thrown up several questions: the optimum time to diagnose dyslexia, the effectiveness of using tried and tested reading strategies, the confidence and training which teachers are given to support children with reading difficulties, the importance of the student's emotional well-being and why children with dyslexia tendencies continue to fall behind their peers?

With each of these questions and the evidence we have seen in relation to Hester, we would like to discuss how these multiple factors combine. This analysis could enable us to confidently put forward the need for a shift in attitude, as to why early diagnosis and the use of assistive technology is imperative to the dyslexic learner. We also feel the importance of understanding the emotional well-being of the dyslexic and how their self-esteem is tantamount to success and should not be overlooked.

The Study indicates the value of engaging a variety of strategies bespoke to the individual learner's needs, which in turn will lead to better outcomes for the student, as they take these skills into secondary and further education. Consideration is required as to how to overcome potential fears that early introduction of assistive technology will hamper or delay the process of imbedding core reading requirements. Finally, the Team recognised the desire of teachers to become dyslexic confident through knowledgeable and skills.

Firstly; early identification of dyslexia. Hester was fortunate to be screened using the DST-J test (2004) in Year 2 at the age of seven. Early identification enabled her school to utilise reading strategies and support programmes. However, since Hester had several older siblings with various degrees of dyslexia, her parents were especially keen to give her independence and confidence around literacy, so they introduced the C-Pen ReaderPen to the school.

According to The Dyslexia-SpLD Trust (2018), 55% of students fail SATs at Key Stage 1 and 2, due to unidentified dyslexia or specific learning difficulties (SpLD), therefore non-identification is a factor implicated in the statistics of 1 in 7 children leaving primary school unable to read or write.

Professor Helland at the Department of Biological and Medical Psychology, University of Bergen (cited in Wehus, 2017) commenced a longitudinal study in 2003, on the importance of early dyslexic diagnosis. She stated those children who can learn to read and write develop other tools to aid with learning across various school subjects, and therefore children with reading difficulties are left behind across the curriculum. Her research advocates the importance of early identification, to help prevent consequent self-esteem and, sometimes, behaviour issues.

Hester's teachers had identified signs of low self-esteem such as when she was asked to use the audio recorder function of the ReaderPen in front of her peers. However, when Hester overcame this worry, she was met with positive feedback from her peers, bolstered by their desire to have a go too, particularly when working in groups.

It could be argued that not identifying Hester as dyslexic could mean that she would not experience stigma due to her additional needs and absence of appearing 'different' because she would not be seen by her peers using special literacy tools. Gasparini's (2011) study identified a similar study subject, whose teachers and parents had chosen to avoid diagnosis for fear of stigmatisation. However, problems arose from this decision causing the child to develop low self-esteem. The adult's fears of stigma may stem from expected negative reactions of peers, and therefore AG's comments are worth noting:

“Peer support is vital for children in understanding the use of this device (ReaderPen). It gives the child using it, more confidence that they can help others. It is really good for other pupils in the class to see it isn't just the teacher who helps children...”.

AG identified the need for all children in the class be given the opportunity to understand how to use the ReaderPen and how it can help them too, such as recording team discussions, enabling peers to do their own work without interruptions from their dyslexic friend and enabling the dyslexic child to undertake their own work without relying upon asking their peers.

Making any assistive technology a 'norm' for everyday use in the classroom and everyday life would remove potential stigma. Today the use of the mobile phone with its myriad of apps is seen as an everyday occurrence by younger generations. Introducing similar devices into the classroom, particularly those that would not be excluded from use in exam situations, is imperative for the success of future assistive technology and for the user.

Early identification can result in staff using specific teaching strategies to enable the individual child to keep up with their peers. Early identification itself is not enough; what staff do with this diagnosis is imperative. A fundamental requirement for staff to achieve the best teaching dyslexia practice involves training all staff.

The British Dyslexia Association have produced a guide to support schools in becoming 'Dyslexia Friendly', (BDA, 2018). Adopting this framework enables schools to gain an internationally recognised qualification: the BDA Dyslexia Friendly Quality Mark. The overall outcome for schools produces both quantitative and qualitative evidence to support marked improvements in the dyslexic pupil's school grades, emotional and mental health, increased self-esteem and lower long-term mental health difficulties through adolescence and adulthood (Cochrane et al., 2018). Similar quality schemes have proven track records improving other areas of interest within education, for example, the 'Food for Life Schools Award' (Soil Association, 2018).

Hester's use of assistive technology enabled her school to develop a plan which ensured a consistent approach to embedding core reading requirements, in addition to working towards helping Hester leave primary school on a level equal to her peers.

Since academic success in secondary school is based on ability to read at speed, assistive technology means she can develop this skill, completing primary school with her core knowledge of reading intact, on a par with her peers and will be able to gain qualifications aged 16 to support further study or work; we feel this is a recipe for success!

Hester has talents and success in areas outside school. Arky, (2018), identified a concept termed '2e kids', twice-exceptional children. '2e kids' have both an ability, (talent) and a disability. Arky found that the ability or disability can mask the other, sometimes leading to poor educational outcomes and life choices, however, if the child's talent and disability are identified early on, educational results can improve at school along with consequent measures of well-being, such as self-esteem, and the child can go on to achieve their full potential.

With these concepts in mind, future studies will focus upon:

- If Hester keeps up with her peers within the increasingly demanding literacy-driven Year 5 expectations and curriculum.
- Which strategies and policies the school will consider when working with dyslexic students and student's with reading difficulties.
- Encouraging the use of the Oxford Junior Dictionary facility to improve spelling, understanding and confidence.
- Supporting Hester to undertake the audio recording of lesson plans for herself to keep on track with her peers; providing her with the skills to be self-sufficient when moving into Year 6 and preparation for her secondary education.

The school SENDCo has indicated her desire to promote assistive technology within this school, and consequently the study team suggest the school consider undertaking the BDA 'Dyslexia Friendly School' programme. The study team put forward the statistics available on The Driver Youth Trust (2018) that 32% of teachers felt their initial training is insufficient and 84% wish to be trained to teach dyslexic children as an incentive to become a Dyslexic Friendly School.

The study team suggest ReaderPens are supplied with a supportive guide, such as that identified by the participant school, to support teachers teaching dyslexic students. Evidence of the ReaderPen being used in combination with established literacy strategies is encouraging. Together they promote independent learning, remove stigma due to early introduction, support emotional well-being of the child with learning difficulties and support the longer-term improvement of reading abilities of children on leaving primary education.

The study team thank the continued support of Hester, her parents and the school she attends and look forward to the next academic years research.

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## APPENDICES

### FEEDBACK

Dyslexic Child (H) - Everyday use of the C-Pen Reader as a supportive element within mainstream education

Autumn Term 2018

Name:

Position:

Please complete the following questions regarding H and her use of the C-Pen Reader this term:

Question	Comment
How often per week is H using her reader pen?	
Does she require a prompt to remind her to use the pen?	
In which lessons does she appear to reach for the pen?	
Why do you think this/ese lesson(s) require her to use the pen more often?	
Has H shown any independent skills this term?	

How are her confidence levels?	
Does she share her skills and knowledge with others? And how?	
You have mentioned you towards the end of the half term using the audio recorder facility? In what capacity and how did you utilise this?	
Any other comments:	
H Comments: What does she like about the pen?	
Is there anything that she isn't happy with about the pen?	
How does it help her?	
Any other comments:	

## FEEDBACK

Dyslexic Child (H) - Everyday use of the C-Pen Reader as a supportive element within mainstream education

First Spring Term 2018

Name:

Position:

Please complete the following questions regarding H and her use of the C-Pen Reader this term:

Question	Comment
How often per week is H using her reader pen?	
Does she require a prompt to remind her to use the pen?	
In which lessons does she appear to reach for the pen?	
Why do you think this/ese lesson(s) require her to use the pen more often?	
Has H shown any independent skills this term?	
How are her confidence levels?	

Does she share her skills and knowledge with others? And how?	
You have mentioned you have been using the audio recorder facility? In what capacity and how did you utilise this?	
Any other comments:	
H Comments: What does she like about the pen?	
Is there anything that she isn't happy with about the pen?	
How does it help her?	
Any other comments:	

## FEEDBACK

Dyslexic Child (H) - Everyday use of the C-Pen Reader as a supportive element within mainstream education

Second Half of Spring Term 2018

Name:

Position:

Please complete the following questions regarding H and her use of the C-Pen Reader this term:

Question	Comment
How often per week is H using her reader pen?	
Does she require a prompt to remind her to use the pen?	
In which lessons does she appear to reach for the pen?	
Why do you think this/ese lesson(s) require her to use the pen more often?	
Has H shown any independent skills this term?	
How are her confidence levels?	

Does she share her skills and knowledge with others? And how?	
How could you support H having a go at the audio recording herself? In the next first half of summer term we would like to capture more data and therefore a focus on H using the audio facility herself in as much fun and active ways would be a positive start to then begin a focus towards the second half of term of using in a more educational aspect. I'm thinking to help her learn her line for the school play? Putting ideas for stories and sharing information with you via the audio recorder?	
H Comments: What does she like about the pen?	
Is there anything that she isn't happy with about the pen?	
How does it help her?	
Any other comments:	

## FEEDBACK

### Dyslexic Child (H) - Everyday use of the C-Pen Reader as a supportive element within mainstream education

First Half of Summer Term 2018

Name:

Position:

Please complete the following questions regarding H and her use of the C-Pen Reader this term:

Question	Comment
How often per week is H using her reader pen?	
Does she require a prompt to remind her to use the pen?	
You indicated in the last term you were hoping to encourage H to reach for the pen in maths and topic. How successful has this progressed?	
H had created a habitual behaviour of reaching for her pen in Reading and Literacy as she had an association with reading in these lessons. How do you feel teachers can encourage H to recognise reading in other lessons and/or have you/her developed any strategies to enable the connection of reading not just to be linked to reading	

and literacy but her other lessons such as maths and topic?	
Has H shown any independent skills this term?	
How are her confidence levels?	
H appears to have confidence in sharing her skill of using the reading pen to other students, would you consider a mentor programme for students who do show promise with strategies and programmes to help with learning difficulties for other students? How important is peer support at this age?	
Pronunciation became a feature in last terms understanding of speech/hearing/spelling and you indicated you have developed a strategy of recording yourself speaking words H found particularly difficult due to her own speech development, missing out sounds. How has this concept developed and has this led to any changes in H's spelling, wide use of vocabulary?	
Has H been confident to use the audio recorder for herself to remind herself of her ideas for writing, science explanations and fun interviews?	
You mentioned the complexities of the current dictionary mode on the pen and expressed how the right child friendly dictionary could help H develop and expand her vocabulary and use of descriptive words. I am pleased to announce this is in development and we hope to have available in the next academic year; do you feel this would be a more enjoyable or learner friendly	

resource than a traditional dictionary and why do you feel looking up the words using the pen creates this interest?	
H Comments: What does she like about the pen?	
Is there anything that she isn't happy with about the pen?	
How does it help her?	
Any other comments:	

## FEEDBACK

### Dyslexic Child (H) - Everyday use of the C-Pen Reader as a supportive element within mainstream education

Final Term 2018

Name:

Position:

Please complete the following questions regarding H and her use of the C-Pen Reader this term:

Question	Comment
H appears to be using the pen on a daily basis, would you feel this has now become a habitual behaviour?	
Would you feel confident in stating you are prompting her less now than at the beginning of the study to take out her pen? Are there any strategies you feel could be incorporated to encourage and enhance her recognising her own choices of when to use the pen?	
At the end of Spring Term, you felt using the pen in other lessons such as Maths would be worth encouraging and exploring the pens uses in not just the assumed Literacy sense? Will these areas require encouragement and notification for the new teacher? What strategies, if any, have you developed for using the pen in other topics?	
Have you recognised the potential of the pen to be helpful for other students in your class and would you	

<p>consider continuing to develop your knowledge and strategies of engagement with assistive tech with your new cohort of students?</p>	
<p>Has H independence increased in this year and could you describe this if there has been a change in confidence?</p>	
<p>In your opinion does the individual needs of the child outweigh the concepts of all children reaching an agreed level at the end of each academic year; is consideration given to the child's biological age, emotional development, use and accessibility to assistive tech (if required by that child). How important are these elements to the teacher and do you feel having time to gain insight into the emotional and individual needs of the child something which could be explored further in teacher training and updated throughout a teacher's career?</p>	
<p>Would you consider H has matured in this academic year and how has this been apparent to you? What has she explored and understood in sharing her unique position of having a reader pen available to her?</p>	
<p>Pronunciation and understanding of speech/hearing/spelling and are tools which support reading and writing. If a child, such as H, has had learning difficulties how would you support the correct hearing of sounds? Have you been able to use the pen in any capacity to support this important aspect of learning?</p>	

<p>We began the year hoping H would develop the confidence to use the audio facility herself; however potentially due to age and uncertainty this has taken a longer period than anticipated how would you suggest we explore and develop this area for her in the coming year?</p>	
<p>By September 2018 we should have implemented the child friendly dictionary (Oxford English Junior) and therefore hope to develop this aspect into H's learning. How would you suggest we support the future teacher and E to make use of this facility and how could this help and expand her understanding?</p>	
<p>H Comments: How does she feel this year has gone with her using the pen?</p>	
<p>Has H continued to feel encouraged and supported by the pen?</p>	
<p>Has H recognised she has been helpful and encouraging to others who are interested in using the pen and would she see herself as a mentor or 'champion' of the pen?</p>	
<p>Any other comments:</p>	

Outline of Semi-Structured Interview – End of Summer Term 2018

## Dyslexic Primary Study

### YEAR 2 - DYSLEXIC CHILD AND TEACHER

Introduction:

I would like to re-introduce you to our young participant whom we met last year, our participant and her then Year 3 teacher spent time familiarising themselves with the text to read facility of the pen and both had found it encouraging and supportive of our participant's specific needs.

Our participant is now 9 years of age and is about to come to the end of her Year 4 studies, she is joined by her Year 4 teacher who has introduced the use of some of the other available functions of the pen, to encourage the development and interest in continuing to explore the import of assistive technology to the dyslexic learner.

Thank you both for joining us today.

QUESTION:

(To Child): Have you enjoyed using the reading pen this year?

What do you use the pen for?

What do you like about the pen?

Which lessons do you use the pen in?

Does anybody else in your class use a reading pen?

Your teacher has told us that you have helped a friend to use the pen, do they like using a reading pen?

Have you used any of the other functions of the pen, such as the audio recorder?

Does your teacher use the recorder and what does she use this for?

Have you used the recorder and what do you use it for?

What reading level are you now on and can you remember what level you were at the beginning of Year 4?

Is there anything else you would like to add to our interview today?

(To Teacher): Would you say your student is a confident learner?

What other strategies does she use alongside the pen for her dyslexia?

You developed a strategy for using the audio recorder to help her become more independent, how has this worked for you both, can you explain what you have done to help her with this?

Your student started school with a hearing loss issue, and therefore we are aware pronunciation can be difficult which impacts on her spelling, has the pen supported or helped in this area?

You have mentioned the pen has supported creative writing, can you explain how the pen has helped with this important skill?