Torquay Boys' Grammar School

spellzone™ The online English spelling resource

Critical analysis – a research paper on a multi-sensory approach to supporting spelling for students with Dyslexia

by Mrs. L Munns, SENDCo. June, 2019

We are very grateful to Mrs. Munns and Torquay Boy's Grammar School for the permission to publish this research paper which was written as part of her National Award for SEND Coordination.

1. Summary of the SEND Project- Identification, Implementation & Evaluation

The intervention I have chosen to present a case study of is an intervention called *Spellzone*, which I will discuss in more depth below. The project was started in the last academic year (2017-8) because it was clear we needed to support more holistically and methodically students who struggle with spelling. The majority of the students who were identified to receive the intervention were either diagnosed dyslexics or had been identified as needing support for their spelling.

I have chosen Student A to present the case study on and have received full written consent from his mother. Student A is a high achieving individual who was diagnosed with dyslexia when he was 10 years and 7 months old by an Educational Psychologist. His parents and teachers had noticed that he was experiencing difficulties with different aspects of literacy, in particular he was a very reluctant reader and had difficulties with handwriting and spelling. There is also a family history of difficulties in this area. He had a well above average range of intelligence score (96th centile) and above average scores in many of the subtests conducted, however his scores in the BAS3 Spelling Test were very low (14th centile) and his handwriting was very poorly formed and presented and looked dyspraxic in nature with an average free writing speed of 14 wpm. He also had weakness in phonological processing (42nd centile) when compared to his intellectual ability. He was diagnosed with specific learning difficulties that were both dyslexic and dyspraxic in nature.

On account of this information, he had additional time in the entrance test and continued to be given additional time in any assessments and examinations throughout Key Stage 3. He was reassessed by our Learning Assessor at the start of Year 9 to provide evidence and support for application to the JCQ for access arrangements. The test revealed scores below 85 in the RAN/RAS and Symbol Digit Modalities Test confirming difficulties with processing and therefore confirming the need for additional time in future examinations. In class too his teachers acknowledged that he needed longer than his peers to complete work and still struggled retaining spelling patterns.

On account of all of this information Student A was referred for spelling support through the new programme I ran in the last academic year called *Spellzone*. He, together with 19 other students, engaged weekly in the programme during a Friday morning registration for 20 minutes per week and were encouraged to mirror that at home each week as well.

Spellzone is an online programme where a school can buy licenses for each student to access an online, specifically tailored intervention to help with spelling improvement. The programme is for ages six to adult and was written by an experienced dyslexia teacher (Shireen Shuster) for use with

learners who have dyslexia because it follows a multi-sensory approach. Its aim is to follow the principles of multi-sensory teaching using sound, sight and movement to teach spellings and to fix them in the mind. In particular, it builds strategies to support the understanding of the unstressed vowel, which some spelling programmes do not.

At my school in the last academic year students were selected by their English teachers or from those I already had on my monitoring list for spelling. This academic year however students are identified through an English Department baseline spelling test using the online programme *Doodle* in Year 7 or in years 8- 11 through teacher referral on account of poor spelling despite classroom strategies to support. The development of support for spelling has been rich and despite the difficulties some profess of learning to spell proficiently due to the multifaceted historical and cultural factors influencing our spelling patterns and the alphabetic system, 85% of the English spelling system is predictable. (Department for Children, Skills & Education: 2009, pg 2). The DCSE guide *Support for Spelling* (2009, pg 2) recommend that: "A good spelling programme gradually builds pupils' spelling vocabulary by introducing patterns or conventions and continually practising those already introduced and … Spelling strategies need to be taught explicitly and applied to high-frequency words, cross-curricular words and individual pupils' words." The Spellzone programme certainly applies these and other recommendations in the guide and thus was identified as something that would benefit our students.

With respects to the causes for implementation, I recognised there was a gap in our provision for spelling support and dyslexia and given the fact we have a very small SEND team (three staff, one currently away on maternity leave) with no Teaching Assistant support, implemented the programme as it effectively ran itself. The role I played was in monitoring and keeping a track on the progress of each individual and ascertaining an exit point percentage for each student. I had initially drawn up a programme which was very time intensive for me and was a ten-week intervention whereby I would individually assess students and then teach a specific programme of intervention. On speaking to local SENDCOs at other similar settings I realised that was not going to be the best use of my time so approached my Head Teacher to ask for funds to run a trial of *Spellzone* and luckily, he agreed.

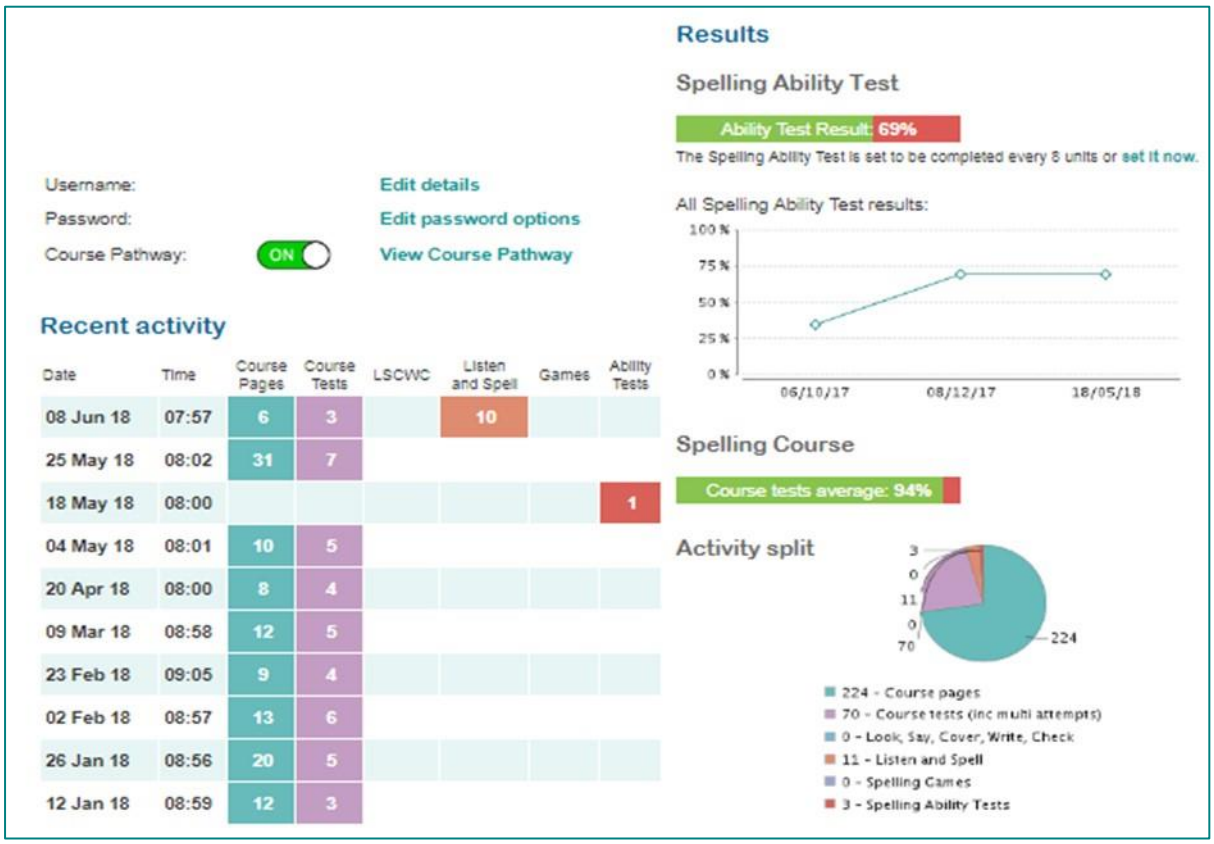
I extracted students from every Friday morning registration (20 minutes) to complete the *Spellzone* programme and encouraged them to mirror this at home as well. Parents/ Carers were informed via a letter and asked to support and encourage students at home. Students are all given individual log ins and the first thing they complete using headphones is a baseline test. From the results of this the programme creates a tailored intervention targeting their areas of need, they work through eight online multi-sensory tasks and then complete another test. This then shows progress in a graphical form which can be shared with the student and parent/ carers and resets the tailored course accordingly.

The administrator (e.g., myself) can monitor exactly when the students log on and how well they are doing throughout, it really is an effortless system for the administrator which has proven to get excellent results. After the first few sessions I agree with each student what their personalised exit criteria will be, e.g., an improvement from 25- 75%, this encourages them to get more done at home to enable access to the next test more quickly.

To better understand the effectiveness of the intervention on the nationwide scale I emailed the Director of *Spellzone*, Barry Perks to get the big picture about the effectiveness of the programme, I have included his email in Appendix 1 below. It talks about the popularity of the course and gives some feedback about the effectiveness from specific schools and highlights a random case study. It echoes the results we have had in my school, albeit on a far smaller scale. Average annual improvement from the start to the end of the course in the school detailed Appendix 1 is 9%, in my school the figure was 36%, but of course I was running the course with far fewer students in a

different type of school. Within my own setting I had 20 learners completing the programme over the course of a year, for those who regularly attended the extraction sessions and completed additional session at home the progress rate on average was 36%, there were a few outliers with attendance issues who did not achieve this however. Therefore, as an intervention it is time efficient, tailored and progress can be measured well and reported back to the student and parents/ carers.

For the student I am investigating, I have included his summary below. It shows his starting level following the Spelling Ability Test as 32% and his finishing level as 69%, at which point he was able to exit the provision and continue practising at home. This student has always struggled with his spellings but he reported that he found the programme helped him to identify patterns and understand the rules of spelling better. By his own volition there are certainly words he will always find difficult and he might continue to misspell them, but arguably the course has had a positive impact on his spelling ability.



2. Literature Review detailing the evidence for the effectiveness of the intervention.

There are many different definitions of dyslexia, but for the purpose of this study I will use the British Psychological Society definition of 1999:

"Dyslexia is evident when accurate and fluent reading and/ or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the 'word level' and implies that the problem is severe and persistent despite appropriate learning opportunities. It provides the basis for a staged process of assessment through teaching." (Babcock, 2011)

Effectively *Spellzone* uses a multi-sensory approach to support for spelling weaknesses. The British Dyslexia Association's *Dyslexia Friendly Schools Good Practice Guide* (2018) promotes the use of a structured spelling approach with lots of multi-sensory opportunities (Easthap & Gregory, 2018, p. 83). This is echoed by Adams-Gordon who argues for a multi-sensory approach suggesting that

"Using a variety of senses simply opens up more doorways into the brain" (2010, p. 6). She discusses the four generally recognised sensory modalities: visual, auditory, tactile and kinaesthetic and explains that students benefit from firstly learning spelling strategies in their preferred modality, but also the importance of repeating the learning through other modalities. This is important because the dominant learning modality of the student may have development implications, e.g., the preferred modality might change over time, therefore "Teaching using multiple modalities eliminates … inefficiency" (Adams- Gordon, 2010, p. 5).

The evidential support for a multi-sensory approach was perhaps first borne out in the seminal work of the Orton- Gillingham Approach (OGA). Samuel T. Orton (neuropsychiatrist and pathologist) and Anna Gillingham (educator and psychologist) who together compiled and published materials to support students with dyslexic type difficulties. The Orton Academy describes the approach as: "The Orton-Gillingham Approach has been rightfully described as language-based, multisensory, structured, sequential, cumulative, cognitive, and flexible." (*Ortonacademyorg*, 2019). The key principles of this approach to learning are: simultaneous multi-sensory, a systematic and cumulative approach that follows a logical, sequential order, uses direct instruction, diagnostic teaching using continuous assessment, the use of synthetic and analytic instruction and comprehensive and inclusive (Adams-Gordon, 2010, p.7-8). All processes which are used in the *Spellzone* programme.

Kast *et al* (2010, p 179) have argued that "the human brain has evolved to develop, learn and operate optimally in multisensory environments…. (and) multisensory experiences enrich our memories and influence ongoing processes" hence the OGA has a long and rich history of supporting students with Dyslexia both to read and spell more fluently and accurately. Thought to counter this in an Evaluation of the Dyslexia Training Programme *(*DTP), which is a multi-sensory method for supporting students with reading and spelling used in the USA I found some contrary information. Oakland *et al* (1998) suggested that in their study of more than 2000 children using the programme in Texas the DTP had little impact on the development of spelling skills. They suggest: "The complexity of spelling makes accuracy an elusive goal, even with intensive efforts during remedial instruction to make students aware of and manipulate key elements of language" (Oakland *et al*, 1998, p.8).

Further criticism of the absolute effectiveness of this approach would be the argument that all children learn differently and what works for one will not necessarily work for all, more engaged and motivated students will do better, measuring the impact of a specific intervention therefore is incredibly difficult and impact of environmental and familial factors cannot be accurately measured. I also found a lack of wide scale research, most studies I read about were very narrow in focus and arguably cannot be applied as absolute general principles. Clearly, what is important is the individualisation to fit the specific learning profile of the individual. To surmise therefore, I would agree to some extent with Oakland *et al*, complete accuracy in spelling for dyslexic students is rarely mastered, but I think the pessimism of this comment is not totally accurate given the improvement and positive impact a multi-sensory approach can have.

One other benefit of the *Spellzone* programme is that it is a computer programme, rather than a paper-based intervention. Empirically speaking, 21st century children are more motivated to use it; it is easy to access, even on a smartphone or tablet and students can dip in and out without too much fuss. The individualised programme it creates enable progress to be tracked and builds self-esteem in the student as they see their progress graph over time. Some studies have been done on computer-based spelling learning. Kast *et al* said "there is evidence that both children with and without dyslexia profit from the computer-based training in a similar way. Both groups were able to use the visual and auditory coding systems implemented in the learning software to acquire spelling skills. Children with dyslexia were able to strengthen their memories of grapheme to phoneme correspondence." (2011, p.197). Similarly, Ecalle *et al* (2008) support these findings arguing that training using a computer game incorporating an audio-visual phoneme discrimination task with ortho-phonological units can improve literacy skills (p.231). Certainly, this has been borne out in not only the success of students using *Spellzone*, but also the increasing number of online programmes

to support literacy development, like *IDL* and *Lexia* to name but a few. Though this hasn't been without some words of hesitation, Sandman- Hurley (2014) has commented that although technology to support spelling development is acceptable, if we spent more time looking closely at student's writing errors and saw their writing as a window into their individual dyslexia we could support them better, he opts for a more holistic orthographical approach. Sadly, this individual window approach, is not conductive to most schools in the present funding crisis, hence a preference for more manageable computer- based systems will no doubt proliferate.

3. Critical analysis of the role and function of existing tools and systems for collecting, analysing and using data in relation to all pupils with SEND and how these impact on decision making for these pupils.

Data within my school is collected three times a year through *SIMS*. Each subject area will submit a grade which is then measured against a student's projected target from their KS2 data. Initially, it is the Head of House's responsibility to track the progress data of the students in their house through a cycle called *Monitor- Plan- Do- Review* (based on the 2015 SEND Code of Practice, *Assess- Plan- Do- Review*). Subject Leaders and teachers also track the progress of students too through internal monitoring procedures. Tracking includes indicators of need type, e.g., SEND, EAL and PP. This tracking might then reveal where students are not making expected progress in certain areas. According to the graduated response it is the role of the subject teacher in the first instance to support students not making adequate progress in their subject. Students not making progress are easily spotted on the *SIMS* system as we use a Red, Amber, Green, Purple colour coding (Red = underachieving significantly to Purple = over-achieving). If, despite subject specific support, the student is still not making progress after more than a term, alternative avenues of support will be pursued and this normally means a referral to the SEND team for potential assessment of learning needs. The system is clear, relatively easy, transparent and accessible to all teachers, so fits with our school, which is a selective school with excellent results. Having looked at a range of other tracking systems in secondary's which assess more frequently and also track things like reading and spelling ages, I believe the one we use is fit for purpose. The main problem is that the projected targets for some of the students are not always achievable, e.g., all grade 9s for GCSE, and sometimes inaccurate, e.g., some students did not take the KS2 SATS so projected levels were based on teacher data. Data by its nature can be fickle and takes a big picture swipe without understanding the outliers, but that is a debate for another time.

If a student has been referred to the SEND team, we then to take the decision of what to do to support them. The referral already contains teacher's views, so the first step is to speak to the student and parents/ carers to get their perspective on what is working, not working and what needs to change. Sometimes we will employ our Educational Psychologist to assess the student to get a better picture of need and support. The EP will always run a battery of tests that she thinks will best assess the needs of the student. This data is then crucial in better understanding the needs of that student. For example, understanding that the student has weak auditory processing or amazing visual skills will help better inform quality first teaching. This information is then put into a SEND Plan which is given to teachers to enable them to either support a student's learning deficits or enable a teacher to tap into their strengths to enable more effective inclusion.

SEND Support students are tracked by myself after each data drop. I keep a running track of attendance, progress residuals and any interventions and their effectiveness. I also complete a review at the end of the year assessing the outcomes of our KS4 and KS5 external examination data against national trends using FFT. With respects to the termly internal assessments, I initially look at the progress residuals taken from SIMS to enable me to get a clear picture of where SEND students are with respects to their peers and each other. If a SEND student has an overall negative residual, I will delve deeper into the data to see in which subject areas this in to help inform my decision

making with respects to interventions and at which level intervention should occur. As a selective school, progress for SEND students tends to be good on the whole, but there are trends for certain types of learners, for example students with ASC tend to struggle a lot with English, which is an area I'll be working on in the coming year.

4. Analysis of the effectiveness of the intervention for this target pupil with reflection on the value of in-depth analysis of one pupil when reviewing systems and processes in place for all pupils.

Student A's progress in the *Spellzone* programme was generally typical of the progress of all of the learners who took part in the trial of it last year (36% average progress from start to end). Not only did the programme allow the student to improve his spelling, so supporting literacy development thus engendering greater confidence and enjoyment in his writing too. As a student he was/ is well motivated and conscientious which made the process a lot easier and more successful, the fact that he was able to access the support from home too made the intervention more accessible. Moreover, the nature of the computer-based element made the process for me very manageable, I was able to individually track the progress of each student and feed back to parents/ carers and teachers. I was also able to look specifically at their tailored learning pathway and see when and how often they were logging on to enable me to either praise them or encourage them.

The system worked so well we have increased the number of licenses we have bought this year and are running a more systematic approach to the intervention. Rather than encouraging the intervention to run over a year I am looking to exit students more quickly to enable the licenses to be used by more than one individual as we can wipe the previous data once targets have been reached. I am now also working more closely with the Head of English to identify students in need of this provision and we now have a waiting list for it. We are instigating a more formal reward system too to recognise the achievements of the learners too.

The only problems really arise when students do not do any additional practice at home, arguably leading to a loss of momentum from the student as it takes a longer while for them to make obvious progress. Also taking students out of too much of the curriculum, even registration time can be problematic and contestable to some extent. I have not yet done any studies on whether the impact is long lasting, e.g., whether they start to fall back into spelling routines which are inaccurate, though this is something I aim to do this year by asking some from last year's cohort to take the spelling test again to see how much they have remembered.

To surmise, the *Spellzone* programme is well tailored to the needs of our students and I have found it a manageable and meaningful way to support their spelling in a time-efficient way.

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Appendices

Appendix 1

Email from Barry Perks, Director of Spellzone, 21st December 2018

Hi Lucy,

Many thanks for considering Spellzone for your paper.

Although Spellzone has been around since 2001, we have not had any published research on the effectiveness of the resource. It is actually quite difficult to get this information from schools, however it is something that we are looking into commissioning in 2019 and we do have testimonial videos being shot in two schools in January.

All Spellzone school accounts provide breakdowns of information on activity and results so it is possible to report on effectiveness over specific periods of time. We have access to all this information on our data base. Below is a summary from a random secondary school and also the Ability Test results from a random Y9 class within that school. Unfortunately, I am unable to tell you the name of the school without first contacting them for permission and I have removed the student's names.

The fact that many of our current schools have been with use for over 5 years (some over 8 years), I believe, is a good testament. These case studies may help, in particular the Casterton and Millthorpe as they give some specifics: https://www.spellzone.com/pages/comments.cfm

For example, *Terrie Penrose-Toms at Casterton College* says: *"53% of the 98 students using Spellzone raised their standardised scores to 100 and above in six months. One student's standardised score raised from 99 to 131. This is a truly phenomenal result. I just wanted to share the best result I have ever seen."*

Terrie also said in the email to me recently:

"I don't know if you realise how brilliantly our school did with our progress last year? We are going from strength to strength. We also have more children than ever completing Spellzone on a weekly basis."
We have recently done some site analysis and these may be of interest to you:

Since 2009:

Spellzone course tests completed:	2,665,456
Spelling activities and games completed:	2,793,519
Word lists created by users:	553,565

We would be very interested in reading your paper and sharing on the Spellzone website (if it is possible and appropriate for you). As I said above, it is difficult to obtain this feed-back yet ironically, it is what teachers ask us for!

I hope the above helps you to complete your paper. If you need any further information, please do not hesitate to contact me.

With best wishes,

Barry

Spellzone Results Summary – randomly selected secondary school

Activity split	21 December 2018		
Logins Period	90 days	30 days	7 days
Number of logins	**1413**	**40**	**2**
Spelling Ability			
Average student improvement:		**9%**	
Top student improvement:		**41%**	
Spelling ability improvement is the difference between a student's first and most recent Spelling Ability Test result.			

Spelling Ability Test Results – 30/11/2017 - 30/11/2018 – randomly selected Y9 class from above school