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RESEARCH ARTICLE

A facilitation of dyslexia through a remediation of Shakespeare's text

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ABSTRACT

This article shares the author's research focusing on the facilitation of acting students with dyslexia in actor-training. For some individuals with dyslexia the translation of the written text into image-based symbols using technological modalities can play a crucial role to access and make concrete the meaning of the words; in this case Shakespeare. Describing the author's exploratory construction of a computer tool to assist students with dyslexia to read Shakespeare's words, the article progresses to focus on one individual with dyslexia, whose illustrative PowerPoint compositions representing Shakespeare's words afforded her an autonomy over the text, while supporting working memory weaknesses.

KEYWORDS

Dyslexia; actor-training; Shakespeare; digital technology; mnemonics

Introduction

In a drama-training environment, what pedagogical approaches might be consciously adopted to facilitate the challenges encountered by some students with SpLD (dyslexia) specifically in the reading and acting of Shakespeare's text? This article seeks to promote discussion and exploration into the possibilities afforded by technology as a facilitator of learning and self-expression for acting students with dyslexia. It shares practical experiences into how technological mediation can support differing channels of literacy for those who struggle when interacting with the written word. Constantin Stanislavski, when advocating methods for his acting students to speak and feel the 'essential meaning of a text' promoted the stimulation of mental images, underlining that:

... the whole text of the play will be accompanied by a sub textual stream of images, like a moving picture constantly thrown on the screen of our inner vision, to guide us as we speak and act. (1968, 124)

Stanislavski stressed that this 'inner moving picture film' functions as a lure to galvanise the feelings arising from the words. He identified this visually led phenomenological experience as a 'lifebelt' for the actor when 'your attention is insufficiently stable' (125– 126). Although directed at students of acting in the early part of the twentieth century, Stanislavski's directions carry cogency for contemporary acting students with dyslexia when endeavouring to engage with the written text.

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This article begins by highlighting the challenges faced by some acting students with dyslexia. The second section discusses the possible advantages of human-computer interaction as a facilitator of cognitive processes and comprehension. It introduces the author's creation of an experimental computer tool specifically aimed to enable acting students with dyslexia to connect with Shakespeare's language, while sharing some examples of exercises. The third section centres on one particular research participant and her use of PowerPoint in method and performance, in circumvention of her dyslexia. In the interests of anonymity, she has been given the pseudonym of 'Sophia'. She has granted permission for her work to be included in this article.

The problem

In my teaching role as senior lecturer in Voice and Acting in drama schools and universities, I have regularly encountered acting students with dyslexia.¹ Additionally, I have observed a lack of innovation in teaching approaches to enable those with dyslexia characteristics, with little dissemination of practice shared among the actor-training community. Researcher and actor-trainer, Deborah Leveroy, has recently published in this area (2013a, 2013b, 2015) and reinforces my assertions, arguing that in drama institutions and actor-training 'there are a number of disabling teaching practices and a lack of even basic adjustments' to enable dyslexic students in studio practice, and to foster a positive selfidentity (2013a, 91). The Disability Discrimination Act: Code of Practice Post-16 (DRC 2007, 227) states that, '[a]n educator's duty to make reasonable adjustments is an anticipatory duty owed to disabled people and students at large'.

At British drama institutions dyslexia is included under a general title of 'Specific Learning Difficulty' in student records, making exact statistical numbers of students assessed as dyslexic unclear. In conversation with the Student and Academic Service departments in four major drama schools, they reported that every year there are a number of dyslexic students in each cohort (Barbour, research question, email to: P. Whitfield, 2015, December 3; Crofts, research question, email to: P. Whitfield, 2015, December 17; Morrison, research question, email to: P. Whitfield, 2015, December 21; Zybutz) and in some courses, the numbers are increasing up to 60% (Zybutz, research question, email to: P. Whitfield, 2015, December 4). Leveroy questions support methods that encourage the dyslexic learner to 'fit in' with established practices, rather than teachers changing their approaches (2013a, 79). The frequency of individuals with dyslexia training in acting institutions and their complex (dis)abilities, with variations in learning styles, strengths and difficulties, demonstrates the need for an aware, flexible and inclusive curriculum wherein those with dyslexia are provided with a variety of strategies through which they can fulfil their potential.

My dyslexic acting students have regularly communicated to me their experience of anxiety when trying to work within the boundaries of conventional teaching methods. The obstacles blocking some individuals with dyslexia from being able to contribute freely to sessions which involve a reading of the text raises pedagogical problems for the teacher. The individual can be placed in an exposed position if unable to fulfil tasks among their peer group and the teacher often lacks the expertise to support them. Prior has criticised the lack of conscious, articulated pedagogical practice in actor-training generally and the absence of written, shared accounts. He accentuates the importance of the actor-trainer making their pedagogical methods explicit, asking: 'Why do I teach this way? How do we teach more effectively?' (2012, 50, 52, 125, 161). By sharing my investigations and the findings produced by my research, I aim to improve the current situation for acting students with dyslexia by contributing some strategies with applicability to a range of teaching areas in drama, particularly where the reading of complex texts such as Shakespeare is a central focus.

It is frequently asserted that in an actor-training syllabus Shakespeare should play a central role as it can provoke a significant advance in student learning due to the requirement of intellectual, physical and technical proficiencies (Berry 1993, 9; Rodenburg 2002, 14; Hall 2003, 12; Carey and Clark Carey 2010, xvi). The readability of Shakespeare can present uncharted terrain for some who find Shakespeare's meanings hard to grasp. As Winston specifies, Shakespeare's 'intense and beautiful' language can be the very thing that alienates the young reader (2010, 102). For some individuals with dyslexia, additional hurdles remain in place when trying to find their way into the text. The difficulties in reading that I describe are exhibited by acting students who I have taught and have been assessed as dyslexic by an educational psychologist. It is apparent that some individuals have an inability to read aloud without regular stumbling and insecurity. They explain that sometimes this is because they have forgotten how to pronounce a word, do not recognise the word, do not understand the meaning of the word or the context, have to process the word letter by letter, the small words seem to move about, the print appears as meaningless marks on the page or they have forgotten what they are reading about. In some cases, they cannot explain why they cannot read the words. Moreover, these word difficulties can permeate beyond reading, into the acting and speaking of the text, such as dual tasking if speaking the words while doing something else, holding the words and meaning in working memory, articulating all the syllables in a multi-syllabic word or breaking out of embedded intonation patterns. However, I have also observed that the 'otherness' of Shakespeare's language can uncover a paradox in the work of those with dyslexia. My teaching of Shakespeare has revealed evidence that for those with dyslexia, a confrontation with Shakespeare's unusual word use can block access to meaning, yet can also evoke a unique blossoming of creative modalities.

It is postulated that many of those with dyslexia utilise a dominantly visual modality (Davis 1997; West 1997; Morgan and Klein 2000; Mortimore 2008; Bacon and Handley 2010, 2014; McLoughlin and Leather 2013; Leveroy 2015). Educational psychologist David Grant accentuates that it is important to avoid making generalised statements about those with specific learning differences (2010, 91). Nevertheless, when undertaking psychological assessments of students with dyslexia, Grant has measured their experience of visualisation when reading. Through his observations, Grant relates that, 'both dyslexic and ADHD students reported a more vibrant visual experience when reading, and a greater number experienced imagery when reading, (with only 18%; of dyslexics ... reporting no visualisation when reading)' (91). Grant asserts that, 'it appears reasonable to conclude that in general visualisation is more common in dyslexics and those with ADHD than in dyspraxics or those who have no specific learning difference' (93). Reid also maintains that 'dyslexic people often think in pictures, rather than words' (2003, 173), while McLoughin and Leather stress that it is crucial to understand the abilities as well as the disabilities of those with dyslexia. They maintain that 'dyslexic people should be encouraged to be comfortable with and confident about the use of visual imagery' as visual

methods have been shown to be highly effective for people with learning SpLD (2013, 117–118).

Thomas West is a writer and researcher who identifies himself as dyslexic. He argues that computer technology, in its manipulation of graphics and images to convey information, provides an environment where dyslexics who rely on visual thinking can '... work in a language of pictures ... which might be further translated into whatever ... formulas needed' (1997, 229). In his cognitive theory of multi-media learning, psychologist Richard Mayer emphasises that a symbiosis of pictorial and verbal forms offers a dual channel of information processing. Words and pictures are presented from an exterior source (e.g. on the computer screen) and enter sensory memory through the eyes and ears. Learners can select, organise and integrate information into constructed mental presentations, which are placed into long-term memory (Mayer 2009, 60–82).

Building a computer tool: 'Sensing Shakespeare'

Venturing into unexplored territory for the acting of Shakespeare, I wrote (and had built) a computer program made up of visual, aural and kinaesthetic interactive exercises, using Shakespeare's Sonnet 65 (Shakespeare 1997) as a holding form. Although recognising the challenges of transporting the physical experience of acting onto a computer program, I wanted to explore the facility of the computer to enable a processing of Shakespeare's words, removing the expectation of immediate fluent performance for those who struggle to read. As Mayer highlights, meaningful learning depends on active cognition rather than active behaviour (2009, 22). The need for the actor to be 'on the word' in their realisation, interpretation and spoken communication of Shakespeare's language (Berry 2001, 122) underlines the layers of complexity to be worked through for those with dyslexia. Bolter and Grusin point out that the computer can offer new ways of accessing older materials (2000, 45). Rather than labelling this computer mediation as a transmediation where one medium is transferred to another but much of the original source becomes lost (Kattenbelt 2008, 23) or a re-purposing where the content is borrowed but not quoted (Bolter and Grusin 2000, 44–50) I identify it as a remediation, the representation of one medium inside another, where the new medium remains dependent on the older one (Bolter and Grusin 2000, 45). In this example, Shakespeare's words remain as the nucleus, but are accessed, deconstructed, reconstructed and rehearsed through various synaesthetic modalities afforded by the computer.

I entitled the programme *Sensing Shakespeare* (Whitfield 2009), playing on the homophonic implications around the word 'sense'. The building of it involved a cross-disciplinary team in photography, digital media, illustration and acting. When writing the content of the programme, I consulted the opinions of acting students with dyslexia, and studied the literature on dyslexia. I drew from acting and voice practitioner methodologies, such as Linklater (1992) and Carey and Clark Carey (2008) and endeavoured to address some of the theories of dyslexia through the exercise activities. As a specialist in assistive technologies, Draffan offers an assortment of ideas about technology-enhanced learning for a wide range of HE students with dyslexia (2012, 85–90). However, my rationale for using computer-based technology was narrowly aimed towards the dyslexic acting student engaging with a very specific task and skill set, stepping outside of the typical acting or voice class environment. The use of a computer program for those with dyslexia allows the individual to work alone, thereby removing the stress of peer judgement. The exercises can be taken in small steps, without overloading the learner's short-term memory and exercises can be repeated, thereby building skill and automatisation without a time limit, removing a pressure of 'correct' outcomes. The individual can gradually progress from a learned helplessness formed through a history of negative experience and failure into taking control over their learning and meta-cognition.

Twelve acting students assessed as dyslexic by an educational psychologist were participants in my trial of *Sensing Shakespeare* (Whitfield 2009). My research methodology was that of action research integrated with case study. The nature of action research, wherein a problem is identified, possible solutions are imagined and action taken with an evaluation of outcomes (McNiff 2013), provided an opportunity to explore practical change. Adoption of a single case study enabled me to capture the lived experience of one individual with dyslexia in particular, recording their words and actions in a 'thick description' situated within the context (Geertz 1973, 9; Winston 2006, 20).

A description of three exercises in the 'Sensing Shakespeare' programme

To promote understanding of practice among the actor-training communities and 'shared ways of knowing' (Prior 2012, 197), I describe three of the exercises in my computer program below. These examples are accompanied by a rationale which aimed to underpin acting and offer support for elements of dyslexia.

Example exercise – music and emotion painting graph

Exercise description

Phrases from the sonnet are presented on the screen accompanied with a drawing pad and a selection of buttons with recorded music and colours to choose. The participant is required to speak the phrases aloud noticing the internal feelings activated with the meaning of the words. They are then asked to select some music to play which helps amplify the feeling of the word and to pick some colours and then draw an expression of the words onto the drawing pad while speaking the words aloud.

Rationale mapped to acting

During the process of reading, Rosenblatt has identified two kinds of selective attention: that of the *efferent* (from the Latin *efferre* – to carry away) which focuses on abstracting meaning and facts, and that of the *aesthetic*, which is the lived through emotions, and imagination where 'the literary work of art comes into being' within the reader (Rosenblatt 2005, 45). This exercise activates both the *efferent* and *aesthetic* continuum but is predominantly concentrating on an *aesthetic* response.

Rational linked to dyslexia

The repetition of the words aims to build an aural imprinting of sounds accompanied by a proprioceptive sense of the muscular actions of the articulators to assist those with an *articulatory awareness deficit of dyslexia* (Griffiths and Frith 2002).²

Example exercise – image sonnet

Exercise description

Words from the sonnet appear on the screen with associative images randomly placed above them. The participant is asked to drag an image to the matching word. The images then disappear, and the words are presented with missing letters. The participant is directed to fill the spaces in the word with the missing letters and read the words aloud, retaining the images in their imagination.

Rationale mapped to acting

Shakespeare uses a cornucopia of imagistic metaphors, 'the little word-picture' to illuminate what he has conceived (Spurgeon 1935, 9). The more deeply rooted the images are in the imagination of the performer, the more effectual their spoken expression of them will be (Berry 1993, 112; Berry 2001, 231–232; Noble 2010, 36–37).

Rationale linked to dyslexia

There are numerous books that recommend the use of storyboards to assist those with dyslexia to access and memorise a text by replacing the words with pictures (Borwick in Townend and Turner 2000, 41; Broomfield and Combley 2003, 41; West, 2007; Mortimore 2008, 209). The exercise of removing letters from words and asking the participant to fill in the missing letters is called *Cloze Procedure* (Thomson and Watkins 1998, 118). Sometimes it is used for comprehension of text, but I aimed to heighten awareness of the phonological sounds related to the letters to enhance reading fluency. This relates to the *phonological deficit theory of dyslexia*³ (Elliott and Grigorenko 2014, 46).

Example exercise – the visual storyboard (see supplemental material for the digital animation of this storyboard of Sonnet 65). The underlying research materials for this article can be accessed at (doi:10.1080/13569783.2016. 1194191), Whitfield, P. 2009, Sensing Shakespeare. Multi-media CD-ROM

Exercise description

A pictorial storyboard of the sonnet is presented with an accompanying dyslexic acting student's voice speaking the words of the sonnet. The computer coding is timed so that each picture arrives on the screen simultaneously with the spoken audio version (Figure 1).

Rationale

Mark Sadoski (language and education scholar) and psychologist Allan Paivio have written frequently about the *Dual Code theory of reading and writing* wherein it is proposed that there are two pathways of cognition: that of the verbal and non-verbal (such as mental imagery) with referential and associative interconnections spreading between them (2009, 53). Sadoski and Paivio purport that a concrete verbal phrase that can be easily imaged acts as a mnemonic aid, to be remembered more easily than an abstract phrase. The image peg then acts as a trigger to retrieve large amounts of stored information (Sadoski and Paivio 2009, 63, 110).



Figure 1. The visual storyboard. This image signifies Shakespeare's phrase 'summer's honey breath'; an example of the representation of the text through a visual metaphor. (Art work: Nick Franklin. Photograph: Dave Powell).

The limitations and benefits of the 'Sensing Shakespeare' programme

In observation of the participants working through the programme, it emerged that there are both limitations and benefits to the tool as it currently exists. *Sensing Shakespeare* is a small-scale model restricted by a pre-conceived structure. During its construction, the creative capacity of the exercises for the user was reduced due to technical difficulties with pre-coding and financial restraints. Its content became pre-determined rather than allowing the participants a freedom to respond exploring their individual methods of processing. However, when trialling it, each participant was given a copy of the tool to work through and their feedback was enthusiastic. One participant in particular, Sophia, responded strongly to the visual storyboard genre by making it her primary method of working. The following section proceeds to focus on Sophia and her use of technology.

Sophia's use of technology to enter the text

Sophia brought an original method to my investigation, using PowerPoint as a medium to enter the text. Having viewed the pictorial storyboard of *Sonnet 65* in *Sensing Shakespeare*, she reported that, 'I connected especially to the visual elements that stuck pictures and colours in my mind and helped my imagination' and '... it made it a lot less daunting to read ... it took my mind off concentrating on trying to read the words' (feedback 2012). Sophia adopted this genre into her preparatory work during the Shakespeare acting unit. For all the key assessment points (monologue and sonnet presentation, acting scene with another actor), she translated the written words of the text into Power-Point storyboards, mostly made up of image ideographs denoting her interpretation of the

text. Visually literate, they are impressive in their imaginative allusion, requiring much effort in their compilation.

Sophia gave me a copy of a PowerPoint visual storyboard signifying her monologue for Adrianna in *The Comedy of Errors* (Act ii, Scene ii). She explained that,

[it] does take a while to make but it helped me a lot as I was making it, as I was absorbing and teaching myself and making discoveries, thinking about the different meanings and looking up words I wasn't sure of. I didn't just skim over something I didn't understand, as I had to know what it meant to make the slide. (29 October 2012)

Once the slides were completed, she relayed that,

[they] hooked the text into my brain as I had sectioned it out in manageable chunks and could play the slideshow while I was reciting the text. The added words reminded me of the structure and form that I had looked at, such as alliteration and the richness and meaning of some words

An excerpt from Sophia's monologue: Adrianna in The Comedy of Errors (Act ii, Scene ii).

Ay, Ay, Antipholus look strange and frown, Some other mistress hath thy sweet aspects; I am not Adriana, nor thy wife. The time was once when thou unurg'd wouldst vow That never words were music to thine ear, That never object pleasing in thine eye, That never touch well welcome to thy hand, That never meat sweet-savour'd in thy taste, Unless I spake, or look'd, or touch'd, or carv'd to thee. How comes it now, my husband, O, how comes it, That thou art then estranged from thyself? (Shakespeare 1962, 32–33)

Description and analysis of Sophie's PowerPoint slides

Slide one representing the phrase 'Ay, ay, Antipholus look strange and frown'

The words 'Ay Ay Antipholus' are presented below two pictures and the alliteration in the phrase is picked out by a blue colouring of the first letter of the words. There is a picture of a baby with huge eyes, using a visual rendition of the homophone 'Ay, Ay'. There is also a photograph of a woman's face with striking eyes, looking 'strange'. What is notable is sometimes the image representations do not make sense within the context of the piece – such as using pictures of eyes for the words 'Ay, Ay', where word meaning is 'yes, yes'.

Comment

Throughout my study I have been perplexed by Sophia's mixed use of referents within the gestalt; her image anchors sometimes being particular to the word alone, and not making sense within the whole. The theory of Peters et al. (1985, 129) when researching prose recall among school children throws light on these methods as a form of meaning-making mnemonic. Peters et al. make a distinction between two types of visual imagery effects. There is *Representational imagery* which denotes the kind of images that occur naturally in the mind

of readers when reading, represented in literal pictures. For example, Sophia has included a *Representational* image of the woman denoting the words 'look strange'. *Transformational* imagery is when a re-coding of the text's information is utilised, creating a visual mnemonic symbol, as in Sophia's use of an image of eyes for 'Ay, Ay'. *Transformational* imagery can work by an auditory and visual re-coding of information. As Peters et al. explain, 'the visual images do not correspond directly to the text as presented, yet they provide a direct retrieval route back to it'. This recoding method functions as a stimulus for 'meaning-fulness' in difficult text, especially as a memory device (Peters et al. 1985, 135).

Slide two representing the phrase 'some other mistress hath thy sweet aspects'

The word 'mistress' is represented by a picture of a sexualised concept of a mistress dressed in black leather, rather than simply a woman as in the Elizabethan sense. Sophia has pictured the words 'sweet aspects', as sweet tasting little cakes, here presented in a photograph showing sugary icing-laden cakes, but in the words themselves Shakespeare has indicated the pleasant care/love/look of a husband. Here again, Sophia is using *Transformational* imagery.

Slide three representing the phrase 'I am not Adrianna nor thy wife'

Here Sophia presents a photograph of an actress in the role of Adrianna, appearing confused, as is Adrianna's mental state in the monologue. There is also a 'No entry' road sign signifying 'not' and a picture of a man and woman in a conjoined marriage pose, gazing





happily at their reflection together in a mirror. In this case Sophie is using *Representational* imagery, denoting directly what is said in the text. However, the pictures also encompass the psychological and emotional aspects of Adrianna's feelings, delving beyond the representational layer.

Slide four representing the stanza:

That never words were music to thine ear,

That never object pleasing in thine eye, That never touch well welcome to thy hand, That never meat sweet-savour'd in thy taste,

The three alliterations, 'words were', 'well welcomed' and 'sweet-savour'd' have been underscored with the alliterating consonants emboldened in blue colour. Illustrations of an ear, eye, hand and mouth are accompanied by a design of words and musical notes, objects, a tick sign for 'pleasing' and welcoming gesture and a picture of meat and sweets, all preceded by the no-entry sign, precisely illustrating the meaning of the words.

Sophia describes a synaesthetic approach to her graphics. There are conspicuous examples of *Transformational* connections being made using colour, touch, taste, kinaes-



thetic movement, auditory sounds, which feed directly into her acting and speaking (29 October 2012):

Some images I use provoke a feeling, such as the word 'welcome' I used an orange colour writing as it provoked feistiness reminding me of the sexiness. Some help me bring the words to life such as a picture of torn paper helps me to imagine the sound of paper tearing, so when I say the word it is sort of onomatopoeic. The pictures of spit and contaminated boils on the skin help me to spit the words out, and also by thinking about the horrible pictures, it helps me feel and portray resentment and disgust.

Sophia accentuates the power of inferring images from the verbal form, which then gain an additional layer of embedding in the mind, when decoded back into words. She defined that:

I can imagine the images a lot easier in my mind than just the text, but obviously my brain has to work more into translating the images back into what I need to say for the text. When I try and imagine the text, I can see it in my mind as a block of text but it is blurred and I can only

see the first line, where as I can pretty much visualise the whole order of the PowerPoint without much trouble.

Intermediality in live performance

I encouraged Sophia to include her PowerPoint storyboard as part of an ensemble performance of Shakespeare's poem *Venus and Adonis* (Shakespeare 2007), undertaken by the acting students assessed as dyslexic in my study. In this performance, I sought to support the visual and aural modalities of those students with dyslexia, incorporating digital media, live painting, devised music and physical image tableaux. Presenting her PowerPoint on a large screen during the performance, running simultaneously with the group's acting of the text, Sophia demonstrated an extraordinary dual tasking ability. As she acted the text, she held the device that controlled the slides on the PowerPoint. At each changing word, Sophia manually changed the PowerPoint pictures, exactly on cue, although her attention, voice and body were focussed on her performance. What was remarkable was how deeply Sophia had assimilated her pictures. Immersed in the acting of the piece, her mental schema of images was running through its sequence as she clicked for each picture change.

Chapple and Kattenbelt have argued that technologically driven intermediality transforms theatre practice, constructing a tripartite between performer, observer and the multiple realities presented through the confluence of media (2007, 12). Sophia's mediated interaction with Shakespeare's language produced a dense mix of significations, disturbing the audience's expectations of Shakespearean performance and challenging audience attention in the simultaneously presented media. Yet, as Nibbelink and Merx suggest, this also invited them to 'work through the unstable sensual experiences' provoking a 'reflection on perception itself' (2010, 220) and the shifting dimensions extrapolated from Shakespeare's language. An investigation into the role that this remediation and intermediation had played in expanding Sophia's ways of being present in the text, in process and performance, led me to ancient and modern theories of memory and cognition, both of which offered complementary explanations.

An ancient perspective

The methods used by Sophia correlate with the ancient Greek and Roman utilisation of *mnemotechnics* for their memorising of oratory speeches. According to the historian Yates (1966, 18) the Roman Cicero, in his *De Oratore* on the art of rhetoric, suggests that when delivering a speech, each topic should be transferred into an image and then placed within a particular locus within the imagination. There are similar tactics endorsed by the unknown Roman author of the *Rhetorica ad Herennium* (Anon. in Caplan 1954). The author announces that there are two types of memory: the natural memory, which flows with our thoughts, and the artificial memory, which must be trained (207). He introduces the idea of placing the thing that needs to be remembered as an image into a background, which must be 'small scale', so that they might be 'grasped' by the natural memory. The background that the images are placed upon should be able to be run forwards or backwards in memory sequence, so that, 'reminded

by the images, we can repeat orally what we committed to the backgrounds' (213). This reminds me of Sophia's PowerPoint pictures placed within the slide sequence.

The author makes much of the difference between images for 'things' (*memoria rerum*) and images for 'words' (*memoria verboram*). Yates (1966, 24) elucidates that memory for 'things' is for the subject matter, 'the argument, a notion'. The memory for 'words' means that one must 'represent the words by means of images' (217). Accentuating the subjective nature of the image, he expounds a constructivist philosophy:

One person is more struck by one likeness and another more by another. Often ... when we declare that some form resembles another, we fail to receive universal assent because things seem different to different persons ... Everybody therefore should in equipping himself with images suit his own convenience.

A contemporary perspective

Psychologists Nicolson and Fawcett are prominent researchers into dyslexia, known for their cerebellar deficit hypothesis theory of dyslexia (2010). Although their theory is contested by some (Elliott and Grigorenko 2014, 82) they argue that an impairment of the cerebellum gives rise to difficulties in automatisation of phonological and motor skills, articulation of speech and information processing speeds.^{4.} (These are features of reading, speaking and acting, wherein I have noted my acting students with dyslexia experiencing challenges.) Nicolson and Fawcett have coined the term conscious compensation, describing the extra concentration and effort that dyslexic people sometimes undergo to achieve what might be automatic for some (68). In a personal interview with Nicolson I asked what he thought might be underpinning Sophia's remediation of the text. Nicolson suggested that it is likely that Sophia is using a combination of several frameworks (research question, email to: P. Whitfield, communication 2012, January 16). He explained that there is an advantage gained from re-coding from one form to another which forces a deeper processing and therefore a better memory of it (Craik and Lockhart 1972). Directly relevant is the spread of encoding where the more links one can make between an item and the rest of one's memory, the better the memory (Craik and Tulving 1975). Secondly, Nicolson highlights the idea of building a schema (Bartlett 1932) where it is easier to recall items if fitted into a relatively broad scheme. Thirdly, Nicolson contends that working memory can be facilitated by writing something on paper or on some other accessible format, so that all the items are presented as a unit. The visual representation can be used to circumvent the limitations of verbal working memory. Fourthly, utilising an action sequence can function as a procedural learning system which is independent of any 'declarative' learning system of facts. Nicolson gives the example of a kinaesthetic sequence such as 'tying shoe-laces where your hands know what to do, and in what sequence, although your mind might not have immediate access to the sequence'. Automatic processing, once learned in long-term memory, can function independently of the user's control and uses no working memory resources (Nicolson and Fawcett 2010, 60).

Conclusion

PowerPoint is commonly utilised as an information communicator; however, Sophia used it as a medium in which to reconstruct the written text. The PowerPoint system allows the

user a control of the sequenced timing. Running through the automatic 'Slideshow', or manually controlled, the thoughts can shift freely with the changing slides, while their visual arrangement becomes embedded into long-term memory. Released from the inhibiting blocks of dyslexia, this technological mediation can cultivate what has been identified as the strengths of dyslexia in some individuals (Bacon and Handley 2010, 2014; McLoughlin and Leather 2013). Psychologists Alison Bacon and Simon Handley have carried out studies on the reasoning abilities of those with dyslexia, demonstrating that they draw significantly on the visual components of working memory, with limitations in the verbal and executive components of working memory.⁵ Arguing for the importance of supporting this in pedagogical strategies they underline:

These results present significant ... evidence for the existence of fundamental cognitive differences between dyslexic and non-dyslexic individuals in terms of visual processes, but when they are able to use their visual strengths, they reason just as accurately. Our findings support the use of educational materials and task formats, which readily afford visual thinking ... In a society that strongly favours a verbal literacy-reliant ... facilitation of individual differences in thinking and problem solving style is long overdue. (2014, 343)

Through my observations, trials and collected data, it is apparent that the building of parallel texts (in this case remediated into PowerPoint computer sequences) can assist some individuals with dyslexia in several impactful ways. This re-constructive process serves as a mnemonic tool where working memory is facilitated through the act of mapping the words to pictures or graphic design and deposited in an exterior medium. Individual meaning extracted from the text is anchored through mental models made concrete through patterns and images, which are then placed into long-term memory. This activity stimulates a hermeneutic analysing and thinking-through, while sorting information into linear sequences. Once the formulation of ideas is assembled into an organised structure, they can be rehearsed, enhancing communication in articulation of language and physical performance. Finally, the psychological and emotional states extrapolated from the text can be subjectively developed enhancing creative exposition.

In this article, I have described my first steps in building a computer tool to support dyslexic learners. Although this research has extended my understanding of strategies, which can emancipate some of those with dyslexia, it has not yet reached a conclusion. Currently the computer tool *Sensing Shakespeare* continues in development, exploring exercises, which allow the user an active role in developing a meta-cognitive awareness in how they can access and communicate the text. What is significant in this study is how Sophia channelled a medium beyond what had been anticipated. She moulded the mediation of PowerPoint into a new activity, by-passing her dyslexia. This allowed a fostering of abilities, which would have remained unrecognised in traditional teaching practices, therein fuelling a sense of self-efficacy and an achievement of innovative performances.

Notes

 The existence of dyslexia as an identifiable construct is a contested area as there is no scientifically proven bounded understanding of what dyslexia actually is (Elliott and Gibbs 2009; Elliott and Grigorenko 2014; Stanovitch 1988). The suggested causes, identification and approaches of support for those identified as dyslexic remain diverse and conflicting (Nicolson and Fawcett 2010, 1).

The International Dyslexia Association's definition is:

Dyslexia is a specific learning disability that is neurological in origin. It is characterised by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding difficulties. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge. (IDA 2002)

- Griffiths and Frith carried out tests on dyslexic adults where they were compared with a control group on a measure of articulatory awareness. Their test revealed that those with dyslexia have difficulty in identifying the actions of the articulators in forming the sounds in the mouth related to the alphabetical symbols (2002).
- The phonological deficit theory maintains that people with dyslexia have difficulties with identifying, sequencing and reproducing sounds within a word. They may also have difficulties with sound blending and word repetition (DFES 2004, 89).
- 4. Psychologists Nicolson and Fawcett have outlined their own definition of dyslexia based on a description of cause. It is as follows:

Developmental dyslexia is one of the developmental disorders characterised by impaired functioning of the procedural learning system. The key diagnostic indicator is impaired procedural learning in language areas, leading to specific difficulties in reading, writing and spelling. Early problems will emerge in terms of implicit awareness of phonological rules, but problems will also arise in learning other non-explicit linguistic regularities, including orthography and morphology. Phonological difficulties, motor difficulties, automatisation difficulties, and early speech difficulties frequently occur in dyslexia, but these are not the defining characteristics of the disorder. Children with dyslexia will normally show dissociation between aspects of their procedural learning and those of declarative learning. (Nicolson and Fawcett 2010, 221–222)

5. Alan Baddeley describes the working memory model as comprising of (1) the central executive which is the characteristics of attentional control, ability to focus, to divide and switch attention; (2) the visuospatial sketchpad dealing with visual and spatial information and (3) the phonological loop which is a verbal and acoustic rehearsal system and store. More recently a component called the episodic buffer has been added which forms an interface between the three working memory systems and long-term memory (Baddeley 2007).

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References

- Anon. 1954. *Rhetorica ad Herennium*. Translation from the Latin by Harry Caplan 1954. Cambridge, MA: Harvard University Press.
- Bacon, A. M., and S. J. Handley. 2010. "Dyslexia, Reasoning and the Importance of Visual-Spatial Processes." In *Dyslexia and Creativity*, edited by N. Alexander-Passé, 25–49. New York: Nova Science.
- Bacon, A. M., and S. J. Handley. 2014. "Reasoning and Dyslexia: Is Visual Memory a Compensatory Resource?" Dyslexia 20 (1): 330–345.
- Baddeley, A. 2007. Working Memory, Thought and Action. Oxford: Oxford University Press.
- Bartlett, F. 1932. *Remembering: A Study in Experimental and Social Psychology*. Cambridge: Cambridge University Press.
- Berry, C. 1993. The Actor and the Text. London: Virgin Books.
- Berry, C. 2001. Text in Action. London: Virgin Books.
- Bolter, J. D., and R. A. Grusin. 2000. Remediation: Understanding New Media. Cambridge, MA: MIT Press.
- Borwick, C. 2000. "Spoken Language." In *Dyslexia in Practice*, edited by J. Townend and M. Turner, 31– 54. New York: Kluwer Academic/Plenum Publishers.
- Broomfield, H., and M. Combley. 2003. Overcoming Dyslexia. London: Whurr.
- Carey, D., and R. Clark Carey. 2008. The Vocal Arts Workbook. London: Methuen Drama.
- Carey, D., and R. Clark Carey. 2010. The Verbal Arts Workbook. London: Methuen Drama.
- Chapple, F., and C. Kattenbelt. 2007. Intermediality in Theatre and Performance. Amsterdam: Rodopi. Craik, F. I. M., and R. S. Lockhart. 1972. "Levels of Processing: A Framework for Memory Research." Journal of Verbal Learning and Verbal Behaviour 11: 671–684.
- Craik, F. I. M., and E. Tulving. 1975. "Depth of Processing and the Retention of Words in Episodic Memory." Journal of Experimental Psychology: General 104 (3): 268–294.
- Davis, R. 1997. The Gift of Dyslexia. London: Souvenir Press.
- Department for Education & Skills. 2004. A Framework for Understanding Dyslexia. London: DFS.
- Draffan, E. A. 2012. "Dyslexia, ELearning and ESkills." In Supporting Dyslexic Adults in Higher Education and the Workplace, edited by N. Brunswick, 84–90. West Sussex: John Wiley & Sons.
- DRC (Disability Rights Commission). 2007. Disability Discrimination Act 1995: Code of Practice Post-16. London: TSO.
- Elliott, J., and S. Gibbs. 2009. "Does Dyslexia Exist?" In *New Philosophies of Learning*, edited by R. Cigman and A. Davis, 115–130. Chichester: Wiley Blackwell.
- Elliott, J. and E. Grigorenko. 2014. The Dyslexia Debate. New York: Cambridge University Press.
- Geertz, C. 1973. Thick Description: Towards an Interpretive Theory of Culture in the Interpretation of Cultures. London: Fontana.
- Grant, D. 2010. That's the Way I Think. 2nd ed. Abingdon: David Fulton.
- Griffiths, S., and U. Frith. 2002. "Evidence for an Articulatory Awareness Deficit in Adult Dyslexics." *Dyslexia* 8: 14–21.
- Hall, P. 2003. Shakespeare's Advice to the Players. London: Oberon Books.
- IDA (International Dyslexia Association). 2002. *Definition of Dyslexia* (Fact Sheet). Baltimore, MD: International Dyslexia Association..
- Kattenbelt, C. 2008. "Intermediality in Theatre and Performance: Definitions, Perceptions and Medial Relationships." *Culture, Language and Representation* 5: 19–29.
- Leveroy, D. 2013a. "Enabling Performance: Dyslexia, (Dis)ability and 'Reasonable Adjustment'." Theatre, Dance and Performance Training 4 (1): 87–101.
- Leveroy, D. 2013b. "Locating Dyslexic Performance: Text, Identity and Creativity. Research in Drama Education." *The Journal of Applied Theatre and Performance* 18 (4): 374–387.
- Leveroy, D. 2015. "A Date with the Script': Exploring the Learning Strategies of Actors Who Are Dyslexic." *Theatre, Dance and Performance Training* 6 (3): 307–322.
- Linklater, K. 1992. Freeing Shakespeare's Voice. New York: Theatre Communications Group.
- Mayer, R. E. 2009. Multi-media Learning. 2nd ed. New York: Cambridge University Press.

McLoughlin, D., and C. Leather. 2013. *The Dyslexic Adult*. 2nd ed. Chichester: Whurr Publications. McNiff, J. 2013. *Action Research*. 3rd ed. Abingdon: Routledge.

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Morgan, E., and C. Klein. 2000. The Dyslexic Adult. London: Whurr Publishers.

Mortimore, T. 2008. Dyslexia and Learning Style. 2nd ed. Chichester: John Wiley & Sons.

- Nibbelink, L., and S. Merx. 2010. "Presence and Perception: Analysing Intermediality in Performance." In *Mapping Intermediality in Performance*, edited by S. Bay-Cheng, C. Kattenbelt, A. Lavender, and R. Nelson, 218–229. Amsterdam: Amsterdam University Press.
- Nicolson, R., and A. Fawcett. 2010. Dyslexia, Learning and the Brain. London: MIT Press.
- Noble, A. 2010. How to Do Shakespeare. London: Routledge.
- Peters, E. E., J. R. Levin, J. E. McGivern, and M. Pressley. 1985. "Further Comparison of Representational and Transformational Prose-Learning Imagery." *Journal of Educational Psychology* 77 (2): 129–136. Prior, R. W. 2012. *Teaching Actors*. Bristol: Intellect.
- Reid, G. 2003. Dyslexia: A Practitioner's Handbook. 3rd ed. Chichester: John Wiley.
- Rodenburg, P. 2002. Speaking Shakespeare. London: Methuen Drama.
- Rosenblatt, L. 2005. Making Meaning with Texts. Portsmouth: Heinemann.
- Sadoski, M., and A. Paivio. 2009. Imagery and Text. New York: Routledge.
- Shakespeare, W. 1962. The Comedy of Errors. Edited by R. A. Foakes. London: Arden Shakespeare.
- Shakespeare, W. 1997. Shakespeare Sonnets. Edited by K. Duncan-Jones. London: Arden Shakespeare.
- Shakespeare, W. 2007. "Venus and Adonis." In *Shakespeare's Poems*, edited by K. Duncan-Jones and H. R. Woudhuysen, 131–1194. London: Arden Shakespeare.

Spurgeon, C. 1935. Shakespeare's Imagery and What It Tells Us. Cambridge: Cambridge University Press.

- Stanislavski, C. 1968. Building a Character. London: Methuen Drama.
- Stanovitch, K. E. 1988. "Explaining the Differences Between the Dyslexic and the Garden-Variety Poor Reader: the Phonological-Core Variable-Difference Model." *Journal of Learning Disabilities* 21 (10): 590–604.
- Thomson, M., and B. Watkins. 1998. Dyslexia: A Teaching Handbook. 2nd ed. London: Whurr.
- Townend, J., and M. Turner. 2000. *Dyslexia in Practice*. New York: Kluwer Academic/Plenum Publishers.
- West, T. 1997. In the Mind's Eye Visual Thinkers, Gifted People With Dyslexia and Other Learning Difficulties, Computer Images and the Ironies of Creativity. New York: Prometheus Books.
- West, O. 2007. In Search of Words. England: Oliver West.
- Whitfield, P. 2009. Sensing Shakespeare. Multi-media CD-ROM.
- Winston, J. 2006. "Researching Through Case-Study." In *Research Methodologies for Drama Education*, edited by J. Ackroyd, 41–61. Stoke on Trent: Trentham Books.
- Winston, J. 2010. Beauty and Education. Abingdon: Routledge.
- Yates, F. A. 1966. The Art of Memory. London: Routledge & Kegan Paul.