

12 Challenging dyslexia

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Introduction

Dyslexia remains a troublesome concept. Despite reportedly affecting around one person in ten, and therefore just about every classroom, it continues to elude satisfactory definition. Neuroscientists, theorists and other researchers working in the dominant psychomedical paradigm continue to search for, and disagree vehemently over, neuroanatomical causes of dyslexia. So there is no consensus within this research community on what dyslexia is, nor how it comes about. And dyslexia advocates are among the first to acknowledge that ‘dyslexics’ are a diverse population and that every dyslexic person’s experience of dyslexia is unique. Yet anyone who publicly doubts the usefulness or validity of the dyslexia concept – the idea of dyslexia as a ‘thing’ that can be found in some people’s brains if only we look hard enough – is on treacherous ground. Consider, for example, the case of Julian Elliott. Elliott is both a professor of education at the University of Durham and a qualified educational psychologist. Educational psychologists are trained to assess for and diagnose dyslexia, and so we would perhaps be wise to listen carefully when one of their number expresses doubt over this process. But when Professor Elliott raised his head above the parapet in 2005 by appearing in the Channel 4 Dispatches documentary ‘The Dyslexia Myth’, publishing an article in the *Times Educational Supplement* (Elliott, 2005) and later another in the *Journal of Philosophy of Education*, in which he criticised the theoretical basis, empirical validity and educational justification for the dyslexia concept (Elliott and Gibbs, 2008), he was met with scepticism from the mainstream broadsheet press, opposition from high-profile academics and outright hostility from representatives of dyslexia charities.

Dyslexia is evidently a profoundly political and emotive issue; clearly there are vested interests at work in dyslexia research and charities, and the experiences of literacy and learning differences and difficulties for those people labelled with dyslexia cannot and should not be denied. The importance of this second point cannot be overemphasised. However, to suggest that dyslexia is not ultimately a helpful concept to explain such literacy and learning difficulties is not the same as denying the existence of those difficulties. Unfortunately, political and emotional investment in dyslexia, together with media distortion and misrepresentation of

the dyslexia-sceptic position, have obscured this crucial aspect of the argument. In this chapter, I will step onto the treacherous ground occupied by dyslexia doubters and explore three ideas which challenge the way we tend to think about dyslexia: firstly, that the way in which we label some children as having dyslexia is problematic because it has negative consequences for them and also for some of their classmates; secondly, that ‘biologising’ (Lopes, 2012) dyslexia has not yet produced any effective educational interventions, and despite advances in research technology we are still a long way from understanding the mental operations required for literacy. Yet to question the psychomedical paradigm’s attempts to explain how dyslexia causes literacy and learning difficulties is dangerous, not only because it challenges received wisdom around literacy, learning and ‘dyslexics’ but also because it threatens the vested interests of the significant dyslexia industry and the organisation of education provision. The third idea relates to changes in ‘what counts’ as literacy these days, and as dyslexia is usually defined in terms of perceived underperformance in literacy, these changes imply a challenge to deficit models of dyslexia.

Labelling

The issue of labelling certain people as having Special Educational Needs, including perceived learning difficulties such as dyslexia, presents a serious dilemma. The four main reasons given in favour of such labels can be summarised as:

- 1 To inform specific, appropriate individualised teaching interventions and adaptations to the learning environment.
- 2 To establish rights and eligibility for legal protection, including the educational opportunities and access to accommodations such as assistive technologies and alternative assessment arrangements which result from the relevant legislation.
- 3 To call attention to particular difficulties, informing research and developing and using alternative pedagogies and interventions.
- 4 To help teachers and parents as well as pupils and students by offering an explanation for the observed difficulties. Labelling a child as ‘dyslexic’ can offer some comfort because their difficulties can be attributed to a morally neutral neurological condition, rather to them being lazy, which is reprehensible.

(Adapted from Ho, 2004 and Riddick, 2000)

There are significant problems with each of these justifications as they apply to dyslexia. The assumption that the label will provide a passport to appropriate, individualised intervention in order to improve the individual’s learning is problematic on at least three fronts. Although many mainstream teachers report feeling that the dyslexia label is helpful in enabling them to understand a child’s difficulties, and wanting to act positively towards dyslexic children, they also feel that they do not have the skills, knowledge or training to implement the kind of intervention the label is meant to prompt (Gwernan-Jones and Burden, 2010). There can be only two outcomes from this. The teacher could continue to differentiate the intended learning as best they can in order to take account of

their perception of the child's needs – but this is not necessarily the same as providing a specific, appropriate, individualised intervention. The other possible outcome is to transfer responsibility for the intervention to somebody else, quite likely a specialist teacher or TA. This in itself is problematic on two fronts. Firstly, although prompted by an inclusive ethos, such interventions mark students out as inferior or lacking and isolate them from the curriculum and the social environment of the classroom (Hart et al., 2004). Secondly, although these specialist interventions purport to be individualised, experience suggests that they are only superficially so. For three years, I taught an MA in Specific Learning Difficulties at a large university in northwest England. This was a demanding Continuing Professional Development course for qualified teachers wishing to specialise in dyslexia, accredited by the British Dyslexia Association (BDA), who also oversaw the curriculum and assessment of candidates. The guidelines for professional accreditation, and the way the course was presented to participants, placed great emphasis on participants designing 'structured, sequential, multisensory teaching programme to meet specific individual needs' (BDA, 2012). Yet the reality was that in order to gain approval and accreditation from the BDA, specialist teachers were expected to operate within severe constraints to individuality and personalisation. They were strongly encouraged to stick to a rigid, formulaic pattern of teaching and learning activities. They were expected not only to follow a standardised lesson structure and scheme of work but also to use particular approved 'multisensory routines' within that structure, and even to keep to recommended durations for each activity (for examples, see Kelly and Phillips, 2011). Thus, the level of 'individualisation' only really extended to the entry point of an almost 'off the shelf' literacy programme based on a proprietary, highly structured approach to synthetic phonics. This is despite the fact that for a significant proportion of people identified as dyslexic, phonological processing is not the main difficulty and phonics is not an effective approach to literacy learning for them (Cooper, 2012). Moreover, the virtual insistence on a highly structured, synthetic phonics approach even extended to dyslexic students in Further and Higher Education, many of whom have developed their own literacy strategies in order to be able to continue their studies that far, and would see synthetic phonics as irrelevant if not childish and patronising. In sum, the claim to specific, individualised interventions seems, to me at least, somewhat overstated.

The process by which we select some learners (and not others) for dyslexia assessment and subsequent intervention is also highly problematic. It is well known that many parents, unless they can afford an educational psychologist's fees, have to fight, sometimes for years, to have their child assessed for dyslexia. Many schools and local authorities are often reluctant to support this process and even contest the decision to grant protections and accommodations when the assessment confirms that the child is dyslexic. Meanwhile, the child continues to struggle at school. Of course, many children who are assessed will be told they are dyslexic and will receive interventions such as specialist literacy teaching, access to assistive technologies and examination access arrangements. But what of the child who seems to be struggling with literacy or learning but who is deemed not

to be dyslexic for one reason or another? The child who, for example, has a 'borderline' or atypical assessment profile that means the assessor cannot conclude that they are dyslexic? (In my former professional capacity as a BDA-qualified assessor and teacher-trainer, I conducted hundreds of dyslexia assessments, and oversaw many more, and such 'problematic profiles' were very common.) Or the child whose literacy difficulties are put down to English being their second language, or to their membership of the traveller community? Or the child whose difficulties are ascribed to them simply not being very intelligent, rather than dyslexic? These students are far less likely to receive any of the accommodations and support granted to students deemed dyslexic, even though their difficulties with literacy and learning may be just as frustrating and limiting. There is a Dyslexia Friendly Schools kitemark – but no Moderate Learning Difficulty Friendly kitemark. For such reasons, it is possible to conceive of 'dyslexics' as, in some ways, a privileged group who have access to teaching, support and resources denied to other students whose needs may be just as great. There are no literacy and learning pedagogies which have been shown to be effective for students identified as dyslexic and yet not to work for other students. Given this, the fact that supposedly individualised interventions are often only superficially so, and that the assessment process itself may obstruct rather than facilitate access to educational opportunities for some pupils, it is perhaps worth considering whether the alternative literacy pedagogies and other interventions do in fact need to be tied to the dyslexia label – or whether more students would learn better if we attended more closely to their individual capabilities and needs, without the dyslexia labelling that empowers some children but stigmatises and denies others.

Biologising dyslexia

So far I have discussed difficulties with two of the justifications given for labelling some children as dyslexic. I will start this section by considering the second two, before moving on to examine the heretical proposition that we should abandon the untenable concept of dyslexia.

Since first identified as 'word blindness' and then 'strephosymbolia' over 115 years ago, the conundrum of apparently inexplicable literacy difficulties in otherwise capable children has motivated a colossal amount of research. The first investigations into what we now call dyslexia were by doctors (Miles, 1996), and the vast majority of research continues to use the psychomedical paradigm. Having a group of people identified as 'dyslexic' is helpful in providing both a justification for research and a population to research. As access to technologies like fMRI scanners becomes more widespread, investigations continue to try and identify a neurobiological cause for dyslexia; *Science*, for example, recently published an advance on the currently favoured phonological deficit hypothesis which claimed that impaired access to mental representations of speech sounds underlies dyslexics' reading and spelling difficulties (Boets et al., 2013). However, in over a century of research, with hundreds of books and thousands of scholarly articles published, we still do not have a satisfactory neurobiological or psychological

explanation of dyslexia. Instead, we have a number of contradictory, competing and inadequate hypotheses: the phonological deficit hypothesis, the working memory hypothesis, magnocellular theory, double-deficit hypothesis and numerous others. None of these alone can explain all the cognitive dispositions and behavioural manifestations currently attributed to dyslexia. For example, the phonological deficit hypothesis, which relates to the processing of speech sounds, cannot explain the visual distortions of printed text experienced and frequent letter reversals made by many dyslexic people – only the magnocellular deficit theory offers a (still hypothetical, and highly contested) explanation for this. And the converse of this is true: magnocellular theory cannot explain variations in people's phonological processing ability. Neither is it clear how a phonological deficit can be related to the clumsiness and untidy handwriting often associated with dyslexia, nor to difficulties with accurately estimating time.

Nevertheless, biological research into the causes of dyslexia is often justified on the grounds that it will enable the development of more effective interventions for literacy difficulties, especially in reading. Certainly such research is exciting and has undoubtedly produced a lot of valuable insights into the process of reading. We now know a lot more about which areas and systems of the brain are recruited for the complex set of subtasks that must be performed in order to read fluently, and this body of knowledge looks set to grow. But current methodologies and evidence from this field must both be viewed with some caution. Many brain imaging studies, for instance, use samples made up partly of diagnosed 'dyslexics', partly of 'poor-readers' who have not been diagnosed as dyslexic and partly of 'normally-achieving' readers. Or sometimes the decision to assign participants to the 'dyslexic' or 'non-dyslexic' group is made according to researcher-defined criteria, rather than full diagnosis. Yet the evidence gained from these studies is often used to draw conclusions about the differences between 'dyslexics' and 'non-dyslexics', rather than between 'relatively poor' and 'relatively good' readers. In the excitement about these new technologies, it is also too easily forgotten that the differences in brain activation the images show only demonstrate correlation, not causality. There is a tendency to conclude that 'dyslexics' are worse at reading than non-dyslexics because they are using less efficient mechanisms in different parts of the brain, and they are using those less efficient parts because of some predetermined disposition, influenced by genetic inheritance. However, as Lopes (2012) points out, the eagerness to biologise this relationship overlooks the fact that the observed differences may be effects rather than causes. That is, more proficient readers are more proficient because they have read more, and that this practice effect has resulted in the reallocation of reading function from the less efficient parts of the brain – used when they learned to read, and still used by the less-practised 'dyslexic' readers – to more efficient parts of the brain. A recent MRI study by Kraftnick et al. (2014) suggested just this. A key implication is that there is, in fact, no underlying congenital difference between supposedly 'dyslexic' and 'non-dyslexic' brains: merely differences in stages of reading development, which could potentially be resolved through appropriate teaching intervention and reading practice.

1 A major irony here is that, as yet, the significant body of neuroanatomical
 2 research has yet to produce any effective interventions for dyslexia. Genetic and
 3 brain imaging studies may have their uses, but they tell us nothing about how to
 4 teach people who have difficulty meeting our cultural expectations of literacy.
 5 As noted above, the most commonly advocated approach is a systematic, highly
 6 structured programme based on synthetic phonics. Yet there is nothing new
 7 in this: structured multisensory literacy programmes have been devised and in
 8 constant use since before 1920, well in advance of the biological evidence now
 9 used to justify them (Orton, 1928; Fernald, 1943; Gillingham and Stillman,
 10 1960; Hinshelwood, 1917). And even eminent researchers in the field have
 11 admitted that the psychomedical evidence does not provide compelling justification
 12 for the interventions advocated:

13 We have had to come to two uncomfortable conclusions – uncomfortable at
 14 any rate, for the authors of a book about phonological awareness and reading.
 15 The first is that there is very little direct evidence that children who are
 16 learning to read do rely on letter-sound relationships to help them read
 17 words. The second is that there is a great deal of evidence that these young
 18 children take easily and naturally to reading words in other ways.

19 (Goswami and Bryant, 1990, cited in Thomas
 20 and Loxley, 2007, p.73)
 21

22 From this, it would seem that the idea that the ‘dyslexia’ label is some sort of
 23 passport to scientifically proven, specialised teaching interventions is flawed. To
 24 be sure, it may well trigger some sort of teaching intervention, but it is spurious
 25 to believe that such an intervention has a robust empirical basis. While it cannot
 26 be denied that many people labelled as dyslexic find these approaches helpful,
 27 many others don’t, and we must bear in mind the fact that there is no teaching
 28 approach which appears to be effective for ‘dyslexics’ which is not effective for
 29 other groups of learners experiencing literacy difficulties. Indeed, the opposite
 30 seems to be true: the approaches which are advocated initially for ‘dyslexics’ often
 31 end up being implemented with others who are perceived to be underachieving.
 32 In addition, there do not seem to be significant differences in levels of improvement
 33 in the targeted skill domain between ‘dyslexic’ and other subgroups of students.
 34

35 **Ideology of literacy**

36 Given the complexity of the sensory and cognitive processes required to be
 37 proficient in the invention we call literacy, we should perhaps be more surprised
 38 that so many people learn to read and write with relative ease, than that some
 39 people experience significant difficulties using these tools. However, the fact that
 40 we unquestioningly assume a literate norm means that in the minds of most
 41 teachers, students and parents, the concept of dyslexia is inextricably linked to
 42 perceived literacy deficits. This is not surprising. It reflects official definitions,
 43 teacher-training, research and policy discourse, and media and commercial
 44 influence. Yet the deficit view of dyslexia depends on a particular conception of
 45

literacy and learning which is itself currently subject to challenge. Historically, teachers and schools have tended to promote a form of ‘alphabetic’ or ‘typographic’ literacy in which the essay, or essay-type texts, have been taken as the ideal and which pupils should seek to emulate as closely as possible. Essays and essay-type texts have been widely considered the best way to enable students to evidence not only the most appropriate literacy skills for education and employment but also intellectual abilities like rational thought (Street, 1984). But pedagogy is changing, texts are changing and ideas about ‘what counts’ as literacy are changing, partly motivated by newly emerging literacy practices, many of which are mediated by digital technologies. As such, there is a significant challenge to the essay-text as an ideal. This is evident in classrooms in the ubiquitous use of PowerPoint and YouTube as well as in digital texts and on social media. Social media provide a wealth of potential authentic literacy and learning experiences and do demand literacy, but many of us would accept that composing a text message or reading a tweet demands a slightly different set of competencies than those required for composing or reading an essay. A common educationalist’s response is to decry the ‘decline’ in literacy standards such technologies are supposedly responsible for. This response ignores evidence which suggests that such informal literacy practices can be used to motivate and scaffold literacies which are more acceptable in schools. For example, studies have shown that the motivated wordplay and increased exposure to language concomitant with high levels of SMS ‘texting’ may actually enhance traditional literacy skills (Plester and Wood, 2009; Veater, Plester and Wood, 2011). So another way to respond is to realise that rather than there being a single, ideal form of literacy which all pupils should strive towards, there are different kinds of literacies which are more or less appropriate for different contexts, and to promote opportunities for pupils to develop and exploit contemporary literacies.

Texting provides only one example of the way texts, and so reading and writing, are changing. A key idea when thinking about the way texts, reading and writing are changing is multimodality (Kress, 2003). Whereas the essay-text has only one semiotic mode, one way of communicating meaning – the printed word – digital texts are often multimodal. A multimodal text consists of several semiotic modes: it combines text with other modes such as sound, video or graphics, gesture, animation. In contrast to an essay, a school textbook might well contain some images and diagrams and therefore be considered multimodal, though it would most probably still tend to privilege the written word, with the pictures being supplementary. Whilst it cannot be disputed that the Web has made a superabundance of text available to us, and that in some cases people’s difficulties with reading and writing have simply been transposed online, the nature of many texts is changing, and multimodality is becoming more commonplace. Consider BBC Online, one of the hundred most-visited websites in the world. Until fairly recently, the main news was presented as text, with supplementary pictures and audio. Now, the main stories are presented through video, with text subservient to images and audio. Moreover, technological innovations such as 3D printing, haptics, holograms, virtual and augmented reality suggest a strengthening

challenge to the dominance of the written word as the privileged mode for learning in formal education. Such developments prompt reconsideration not only of what counts as literacy but also how we conceptualise dyslexia and how we organise educational opportunities. For example, dyslexia is often associated with strengths in creative, visual and non-linear thought (West, 2009) such as mechanical construction, 3D mental-mapping or imaging, ‘seeing the big picture’ and ‘making connections between different facets of life’ (Ehardt, 2009 p.3), and this propensity invoked to help explain difficulties with producing and interpreting linear essay-type texts. West (1997 and 2009) argues that a societal shift away from privileging textual representations of concepts and processes, towards a much more visual approach, could lend itself to the more visual thinking processes instinctively adopted by many people labelled with dyslexia. If he is right, then because of the perceived power of this mode of thought, some dyslexic people could find themselves at the forefront of academic thinking and research because of their ‘different’ (or ‘abnormal’) brain organisation rather than in spite of it. This has the potential to be a seismic shift in power and agency for people labelled with dyslexia as well as others who struggle with traditional reading and writing, who have been seriously disadvantaged and marginalised by both educational and wider cultures which privilege reading and writing over other forms of communication and learning.

Conclusion

We have seen that there is no consensus on what dyslexia is, and therefore who is or is not dyslexic, nor on what causes dyslexia. This is not a controversial assertion. We have also seen that although psychomedical and biological research has given us some useful insights into both cognitive aspects of literacy, the way people’s brains can vary in engaging in executing literacy-related tasks, it cannot yet give a full account of these processes, cannot reliably distinguish between ‘dyslexic’ and ‘non-dyslexic’ subgroups (Elliott and Grigorenko, 2014), and has not yet produced any teaching intervention which works for ‘dyslexics’ but not for others. We also know that dyslexia is associated with a very diverse range of characteristics, and that partly because of this every ‘dyslexic’ person’s experience of dyslexia is unique. From this, it would seem that the claim that ‘dyslexia’ offers a helpful explanation for someone’s learning and literacy difficulties might be an illusory one: it appears to offer an explanation because it allows people to give a socially acceptable name to the problem, but provides little of substance beyond that. Here we are about to move onto controversial ground. If nobody can agree on what dyslexia is, or how it is caused; if the assessment and label tell us little about the person or their learning; if even advocates of labelling children ‘dyslexic’ admit that half find the label stigmatising (Riddick, 2000); if being labelled as dyslexic grants access to resources denied to others who may be experiencing similar difficulties; if psychomedical research is useless for producing teaching interventions and inhibits the allocation of resources for research into teaching – should we continue to label some children as dyslexic and others as not? To suggest we

abandon the dominant psychomedical conception of dyslexia is heretical and dangerous because it provokes and threatens not only our received wisdom about dyslexia but also an influential research community, the vested interests of powerful charities, the dyslexia and broader SEN industries, and the structure of educational provision. We must also acknowledge that, for some, 'dyslexic' can be an affirmative identity (Macdonald, 2009). But given that the approaches which work well with 'dyslexic' learners are also effective with others, that psychological assessments ultimately do little to inform teaching practice, and that individualised interventions are divisive and segregationist, perhaps it would be fairer and more inclusive to offer differentiated and personalised teaching and learning without tying it to the diagnostic label, whilst striving towards a less judgemental society which would not look so harshly upon naturally occurring variations in reading and writing proficiency.

Such differentiated and personalised teaching might take account of contemporary notions of critical literacy, which shift the emphasis away from the essay-text and its derivatives and towards appreciation and production of a range of texts and recognise that (a) 'what counts' as literacy depends on audience, genre, medium and the affordances of mode (Cope and Kalantzis, 2000; Gee, 1996 and 2007), and (b) students with labelled with dyslexia, and others who struggle to master conventional reading and writing, are likely to have talents in some modes to complement talents of non-dyslexics in alphabetic literacy. That is, opportunities to work collaboratively with multimodal texts and digital media can help 'level the playing field' in the classroom for learners who are disadvantaged by traditional literacy expectations and practices (Barden, 2014). There are numerous definitions and interpretations of critical literacy, but they converge around building on students' existing practices and knowledge, whether obtained through formal or informal education, and identifying 'barriers and enablers' to participation in textual practices and cultures (Willett, 2009 p.21; also Davies, 2009). In an important book on the future of education and schools, Facer (2011 p.69) suggests that the critical literacy students will need in the text-saturated near-future for social and academic success has three elements:

- 1 Discernment: The ability to judge the quality of information, its relationship to other information, and to personal goals and interest. This will include appreciating the power relations embedded in texts (Dowdall, 2009).
- 2 Multiliteracy: To appreciate the affordances and limitations of different technologies, materials and modes of communication for representation and comprehension, and to be able to work fluently across these.
- 3 Responsibility: In a world where information is ubiquitous, students must learn to consider the consequences of the ways in which they manage, circulate and control the information flows in their networks.

To adopt a critical literacies perspective is thus not to simply say 'anything goes' – rather, it is to recognise that literacy is not merely an end in itself but a means to learn about and express other things, and that different literate forms

are more or less appropriate or effective in different circumstances and for different learners. It is not about saying we should totally abandon the formal structure, grammar and spelling of the traditional essay – with which so many, dyslexic and not, struggle – but about accepting that such an essay is only one literate way of showing what one knows, that it is not inherently superior to other literate forms, and about working inclusively to enable learners to exploit the wealth of expertise they bring, and technologies available, in being and becoming literate 21st century citizens.

References

- Barden, O. (2014). Facebook levels the playing field: dyslexic students learning through digital literacies. *Research in Learning Technology*, 22 (February) [online]. Available from: <http://dx.doi.org/10.3402/rlt.v22.18535>
- Boets, B., Op de Beeck, H.P., Vandermosten, M., Scott, S.K., Gillebert, C.R., Mantini, D. and Ghesquiere, P. (2013). Intact but less accessible phonetic representations in adults with dyslexia. *Science*, 342(6163), 1251–1254. DOI: 10.1126/science.1244333
- British Dyslexia Association (2012). *Criteria for Recognition of Teachers and other Professionals with Specialist Training*. Available from: www.bdadyslexia.org.uk/files/AMBDA-ATS-Criteria-July-2012.pdf (accessed 19 December 2013).
- Cooper, R. (2012). *Neurodiversity and Dyslexia; Challenging the Social Construction of Specific Learning Difficulties*. Available from: <http://outsidersoftware.co.uk/wp-content/uploads/2012/11/Neurodiversity-and-Dyslexia-Challenging-the-social-construction-of-specific-learning-differences.doc> (accessed 19 December 2013).
- Cope, B. and Kalantzis, M. (2000). Introduction: multiliteracies: the beginnings of an idea. In: B. Cope and M. Kalantzis (eds), *Multiliteracies. Literacy Learning and the Design of Social Futures*, pp.3–8. Abingdon and New York: Routledge.
- Davies, J. (2009). A space for play: crossing boundaries and learning online. In: V. Carrington and M. Robinson (eds), *Digital Literacies. Social Learning and Classroom Practices*, pp.27–42. London: SAGE/UKLA.
- Dowdall, C. (2009). Masters and critics: children as producers of online digital texts. In: V. Carrington and M. Robinson (eds), *Digital Literacies. Social Learning and Classroom Practices*, pp.43–62. London: SAGE/UKLA.
- Ehardt, K. (2009). Dyslexia, not disorder. *Dyslexia*, 15(4), 363–366. DOI: 10.1002/dys.379
- Elliott, J. (2005). The dyslexia myth and the feelbad factor. *Times Educational Supplement*, 2 September. Available from: www.tes.co.uk/search/story/?story_id=2128733 (accessed 3 June 2008).
- Elliott, J.G. and Gibbs, S. (2008). Does dyslexia exist? *Journal of Philosophy of Education*, 42(3–4), 475–491. doi:10.1111/j.1467-9752.2008.00653.x
- Elliott, J. and Grigorenko, E. (2014). *The Dyslexia Debate*. Cambridge: Cambridge University Press.
- Facer, K. (2011). *Learning Futures. Education, Technology and Social Change*. Abingdon, Oxon: Routledge.
- Fernald, G.M. (1943). *Remedial Techniques in Basic School Subjects*. New York: McGraw-Hill.

- Gee, J.P. (1996). *Social Linguistics and Literacies. Ideology in Discourse*. Second edition. London: RoutledgeFalmer. 1
- Gee, J.P. (2007). *What Video Games have to Teach us about Learning and Literacy*. Revised edition. New York: Palgrave Macmillan. 2
- Gillingham, A. and Stillman, B. (1960). *Remedial Training for Children with Specific Disability in Reading, Spelling and Penmanship*. Cambridge, MA: Educators Publishing Service. 3
- Goswami, U. and Bryant, P. (1990). *Phonological Skills and Learning To Read*. London: Lawrence Erlbaum. 4
- Gwernan-Jones, R. and Burden, R. (2010). Are they just lazy? Student teachers' attitudes about dyslexia. *Dyslexia*, 16(1), 66–86. doi:10.1002/dys 5
- Hart, S., Dixon, A., Drummond, M.J. and McIntyre, D. (2004). *Learning Without Limits*. Maidenhead: OU Press. 6
- Hinshelwood, J. (1917). *Congenital Word Blindness*. London: HK Lewis. 7
- Ho, A. (2004). To be labelled, or not to be labelled: that is the question. *British Journal of Learning Disabilities*, 32(2), 86–92. DOI: 10.1111/j.1468-3156.2004.00284.x 8
- Kelly, K. and Phillips, S. (2011). *Teaching Literacy to Learners with Dyslexia: A Multi-sensory Approach*. London: SAGE. 9
- Kraftnick, A.J., Lynn Flowers, D., Luetje, M.M., Napoliello, E.M. and Eden, G.F. (2014). An investigation into the origin of anatomical differences in dyslexia. *The Journal of Neuroscience*, 34(3), 901–908. doi: 10.1523/JNEUROSCI.2092-13.2013 10
- Kress, G. (2003). *Literacy in the New Media Age*. London and New York: Routledge. 11
- Lopes, J. (2012). Biologising reading problems: the specific case of dyslexia. *Contemporary Social Science*, (7) 2, 215–229. 12
- MacDonald, S. (2009). *Towards a Sociology of Dyslexia: Exploring Links Between Dyslexia, Disability and Social Class*. Saarbrücken: VDM Publishing House Ltd. 13
- Miles, T. (1996). A hundred years of dyslexia. *Dyslexia*, 2 (3), 145–152. 14
- Orton, S.T. (1928). Specific reading disability – strephosymbolia. *JAMA*, 90, 1095–1099. 15
- Plester, B. and Wood, C. (2009). Exploring relationships between traditional and new media literacies: British preteen texters at school. *Journal of Computer-Mediated Communication*, 14(4), 1108–1129. 16
- Riddick, B. (2000). An examination of the relationship between labelling and stigmatisation with special reference to dyslexia. *Disability & Society*, 15(4), 653–667. 17
- Street, B. (1984). *Literacy in Theory and Practice*. Cambridge: Cambridge University Press. 18
- Thomas, G. and Loxley, A. (2007). Thinking about learning failure, especially in reading. In: G. Thomas and A. Loxley, *Deconstructing Special Education and Constructing Inclusion*, pp.66–76. Maidenhead, Berks: Open University Press. 19
- Veater, H., Plester, B. and Wood, C. (2011). Use of text message abbreviations and literacy skills in children with dyslexia. *Dyslexia*, 17(1), 65–71. 20
- West, T.G. (1997). *The Mind's Eye*. New York. Prometheus. 21
- West, T.G. (2009). *The Mind's Eye. Creative Visual Thinkers, Gifted Dyslexics and the Rise of Visual Technologies*. New York. Prometheus. 22
- Willett, R. (2009). Young people's video production as new sites of learning. In: V. Carrington and M. Robinson (eds), *Digital Literacies. Social Learning and Classroom Practices*, pp.13–26. London. SAGE/UKLA. 23