Dyslexia, authorial identity, and approaches to learning and writing: a mixed methods study

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Abstract

Background: Dyslexia may lead to difficulties with academic writing as well as reading. The authorial identity approach aims to help students improve their academic writing and avoid unintentional plagiarism, and could help to understand dyslexic students' approaches to writing.

Aims: 1) To compare dyslexic and non-dyslexic students' authorial identity and approaches to learning and writing; 2) to compare correlations between approaches to writing and approaches to learning among dyslexic and non-dyslexic students; 3) to explore dyslexic students' understandings of authorship and beliefs about dyslexia, writing and plagiarism.

Sample: Dyslexic (n=31) and non-dyslexic (n=31) university students.

Method: Questionnaire measures of self-rated confidence in writing, understanding of authorship, knowledge to avoid plagiarism, and top-down, bottom-up and pragmatic approaches to writing (Student Authorship Questionnaire; SAQ), and deep, surface and strategic approaches to learning (Approaches and Study Skills Inventory for Students; ASSIST inventory), plus qualitative interviews with dyslexic students with high and low SAQ scores.

Results: Dyslexic students scored lower for confidence in writing, understanding authorship, and strategic approaches to learning, and higher for surface approaches to learning. Correlations among SAQ and ASSIST scores were larger and more frequently significant among non-dyslexic students. Self-rated knowledge to avoid plagiarism was associated with a top-down approach to writing among dyslexic students and with a bottom-up approach to writing among non-dyslexic students. All the dyslexic students interviewed described how dyslexia made writing more difficult and reduced their confidence in academic writing, but they had varying views about whether dyslexia increased the risk of plagiarism.

Conclusions: Dyslexic students have less strong authorial identities, and less congruent approaches to learning and writing. Knowledge to avoid plagiarism may be more salient for dyslexic students, who may benefit from specific interventions to increase confidence in writing and understanding of authorship. Further research could investigate how dyslexic students develop approaches to academic writing, and how that could be affected by perceived knowledge to avoid plagiarism.

Keywords: dyslexia; authorship; academic writing; strategies; learning styles

Introduction

Authorial identity is "the sense a writer has of themselves and the textual identity they construct in their writing" (Pittam et al., 2009, p. 154). A writer with a strong authorial identity has the confidence and understanding to present ideas and arguments as their own, and their writing gives the reader a sense of the author's distinctive 'voice' and perspective, so they are at less risk of unintentional plagiarism. The concept of authorial identity developed from research on cultural and institutional representations of authorship (e.g., Howard, 1995), and from analyses of discourses of writing and composition (e.g., Cherry, 1988; Ivanic, 1995, 1998). It has been used more recently to understand the causes of unintentional plagiarism among university students. Abasi et al. (2006) interviewed students writing in English as a second language about the textual identities they constructed in their writing, and concluded that textual plagiarism should be considered as "an issue of authorial identity in terms of students' perceptions of who they are as writers", and that unintentional plagiarism could occur because of "students' failure to represent themselves as writers who should make a novel contribution, however modest it might be, through critically engaging with sources" (p. 114).

The authorial identity approach was then applied with university students more generally. Focus groups revealed that students had little spontaneous identification with the role of author and perceived a number of obstacles to constructing authorial identities in university assignments (Pittam et al., 2009). The Student Authorship Questionnaire (SAQ) was developed, which measures six personal attributes and approaches to writing that influence authorial identity: 'confidence in writing', 'understanding authorship', 'knowledge to avoid plagiarism', 'top-down approach to writing', 'bottom-up approach to writing' and 'pragmatic approach to writing' (Pittam et al., 2009).

The confidence in writing, understanding authorship, and knowledge to avoid plagiarism scales of the SAQ measure self-rated attributes that contribute to a stronger authorial identity, with higher scores in each case associated with greater authorial identity. The top-down, bottom-up and pragmatic scales measure approaches to academic writing, or self-rated use of high level strategies for academic writing. Top-down refers to an approach or strategy of beginning the process of writing by identifying high level ideas, concepts and arguments, with higher scores associated with greater authorial identity . Bottom-up refers to an approach or strategy of beginning the writing process by identifying lower level source material, and pragmatic refers to an approach or strategy of using more secondary material in order to save time or gain marks, with higher scores in both cases associated with weaker or less well developed authorial identity (Pittam et al., 2009). The SAQ was used to evaluate an intervention to improve students' authorial identity, which showed that authorial identity could be a useful focus for initiatives to help students improve their academic writing and avoid unintentional plagiarism (Elander et al., 2010).

A research need identified by Pittam et al. (2009) was to examine authorial identity among students with dyslexia, whose academic achievement is lower than that of non-dyslexic students (Richardson, 2009; Richardson & Wydell, 2003), and whose numbers in UK higher education have increased in recent years, with 24,820 in 2007, or 2.8% of the national student population (HESA, 2010). Dyslexia is best known as a problem affecting reading, but academic writing is a cognitively demanding activity that involves multiple processes and is highly dependent on working memory (Torrance & Jeffery, 1999), and many of the cognitive processes involved would be expected to be affected by dyslexia.

Studies that compared dyslexic and non-dyslexic students' writing mainly focused on the actual production of written text, and showed consistent differences in low level aspects of writing, with

dyslexic students producing text more slowly, with fewer words and more spelling errors (Connelly et al., 2006; Erskine et al., 1999; Stirling et al., 1998; Wengelin, 2007). The evidence about higher level aspects of writing is mixed. A questionnaire survey showed that students with dyslexia reported difficulties with organization of essays and expressing ideas in writing (Mortimore & Crozier, 2006). Of the studies that compared the writing produced by dyslexic and non-dyslexic students, some found that writing produced by dyslexics was scored lower for 'structure' (Hatcher et al., 2002), 'lexical density' and 'lexical diversity' (Wengelin, 2007), but another found no differences in 'ideas and development', 'organisation and coherence', and 'lexical diversity' (Connelly et al., 2006).

Wengelin (2007) suggested that the "effort of encoding written words takes cognitive capacity away from other processes such as vocabulary choice and sentence structuring" (p. 80), so although dyslexia would not be expected to influence authorial identity directly, difficulties with transcription and spelling could reduce the cognitive and working memory resources available for formulation, planning and revision, which are important in the development of a strong authorial identity.

Another research need identified by Pittam et al. (2009) was to investigate how the constructs measured by the SAQ are related to 'deep', 'surface', and 'strategic' approaches to learning. Those constructs developed through a long programme of research beginning in the 1970s (e.g., Biggs, 1993; Entwistle & Waterston, 1988; Marton & Saljo, 1976), and are measured by questionnaires such as the Study Process Questionnaire (Biggs et al., 2001), or the Approaches and Study Skills Inventory for Students (ASSIST; Tait et al., 1998). Students adopting a deep approach to learning "have a personal interest in learning and set out with the intention of understanding the material", whereas those adopting a surface approach "focus on memorising facts in an unrelated manner", and those adopting a strategic approach "are concerned with both the academic content and the requirements of the assessment system, and they use whatever strategy will maximise their chances of success" (Byrne et al., 2004a, p. 450).

Students' approaches to writing have also been described as 'deep' and 'surface'. A deep approach to writing was described as involving metacognition, reflection, hierarchical organisation, engagement, self-referencing, active meaning-making, and audience concern, whereas a surface approach was described as involving reproduction, linear structure, detachment, and passive ordering of material (Lavelle & Zuercher, 2001, p. 386).

The terms used to describe deep approaches to learning and writing would also be expected to characterize strong authorial identities, whereas those used to describe surface approaches would be expected to characterize weaker or under-developed authorial identities. Pittam et al. (2009) suggested using the SAQ to examine potential links between a deep approach to learning and a top-down approach to writing, between a surface approach to learning and a bottom-up approach to writing, and between a strategic approach to learning and a pragmatic approach to writing. Evidence like that could help researchers understand how students' broad approaches to learning are translated into more specific academic writing strategies.

Among students with dyslexia, however, difficulties with low level aspects of writing caused by dyslexia, or deliberate strategies adopted to compensate for those difficulties, could disrupt the translation of approaches to learning into more specific approaches to writing. For example, one study found that, compared with non-dyslexics, dyslexic students reported more deep approaches to learning, despite also reporting *less* use of specific learning strategies – such as 'selecting main ideas' – that would be expected to be associated with a deep approach to learning. The authors noted that "the enacted strategies of the students with dyslexia – as least as they reported them – are incongruent with their

approach to learning," and they suggested that dyslexic students might adopt certain learning strategies partly as a way of compensating for their difficulty with reading (Kirby et al., 2008, p. 93).

More information about dyslexic students' authorial identities and approaches to learning and writing could help researchers understand the difficulties they experience at university, and inform measures to reduce the impact of dyslexia. More specifically, a better understanding of how authorial identity and approaches to learning and writing are related differently to one another among dyslexic and non-dyslexic students could provide insights into ways that students' learning and achievement at university can be affected by dyslexia.

However, the Kirby et al. (2008) study is the only evidence to our knowledge about approaches to learning among students with dyslexia, and we know of no studies of authorial identity among students with dyslexia. We therefore wished to compare SAQ and ASSIST scores, and the correlations among those scores, between dyslexic and non-dyslexic students. We specifically wished to test three hypotheses:

- Based on the suggestion that difficulties with encoding and transcription could reduce the cognitive resources available for higher level aspects of academic writing (Wengelin, 2007), leading to difficulties with organization and expression of ideas (Mortimore & Crozier, 2006), we predicted lower scores among dyslexic students for the confidence in writing, understanding authorship, knowledge to avoid plagiarism, and top-down scales of the SAQ, and higher scores for the bottom-up and pragmatic scales.

- Based on the suggestion that specific aspects of approaches to writing and approaches to learning may be related (Pittam et al., 2009), we predicted that among non-dyslexic students there would be positive correlations between the following pairs of scores: top-down approach to writing (SAQ) and deep approach to learning (ASSIST); bottom-up approach to writing (SAQ) and surface approach to learning (ASSIST); and pragmatic approach to writing (SAQ) and strategic approach to learning (ASSIST).

- Based on the suggestion that strategies to compensate for dyslexia could lead to incongruence between approaches to learning and enacted writing strategies (Kirby et al., 2006), we predicted weaker relationships between SAQ and ASSIST scores among dyslexic students compared with non-dyslexic students.

We also wished to explore in greater detail the ways that writing difficulties caused by dyslexia, and strategies adopted to compensate for the effects of dyslexia, could affect students' writing and authorial identity, using qualitative interview methods. Non-dyslexic students' understandings and experiences of academic writing and authorship have been explored in a number of qualitative studies (e.g. Ashworth et al., 1997; Pittam et al. 2009; Read et al., 2001), so in the qualitative part of the present study we focused on dyslexic students with stronger and less strong authorial identity, as indicated by SAQ scores. The aim was to explore and contrast potentially different understandings, experiences and use of writing strategies among dyslexic students with stronger and less strong authorial identity.

Methods

Participants

The participants were 31 dyslexic and 31 non-dyslexic students at the University of Derby, UK. The inclusion criteria for the dyslexic students were current student status, receipt of Disabled Students Allowance on the basis of diagnosed dyslexia, and no other forms of learning disability. There were 10 male and 21 female dyslexic students, aged from 18 to 49 years (mean 26.7, SD 9.0), with 10 first years,

13 second years, six third years, and two Masters level students, who were studying joint honours subjects (12 students), psychology (six), education studies (five), law (three), and nursing, social care, art, sociology and biology (one student each).

The inclusion criteria for the non-dyslexic students were current student status and absence of dyslexia or other forms of learning disability. There were 18 male and 13 female non-dyslexic students, aged 18 to 55 years (mean 29.3, SD 10.9), with 15 first years, seven second years, and nine third years, who were studying law (13 students), joint honours (five), psychology (five), education studies (three), social care (two), sports studies (two), and history (one student).

Six of the dyslexic students were invited to be interviewed, based on their total SAQ scores. There were three students with high SAQ scores (total scores in the top 10% of the sample distribution) and three with low scores (total scores in the bottom 10% of the sample distribution). Interview participant details are given in table 1. Students are identified by pseudonyms.

Table 1. Dyslexic student interview participants

Student	SAQ score	Gender	Age	Year of study	Course
'John'	High	Male	23	First	Joint Honors
'Jayne'	High	Female	21	Second	Joint Honors
'David'	High	Male	48	Third	Law
'Becky'	Low	Female	18	First	Nursing
'Steve'	Low	Male	21	Second	Joint Honors
'Gemma'	Low	Female	27	Third	Psychology

Measures

Student authorship questionnaire (SAQ)

The SAQ is an 18-item questionnaire measuring self-rated personal attributes and writing strategies associated with authorial identity in academic writing. There are 17 statements with five-point Likert-type response scales ranging from 1 ('strongly disagree') to 5 ('strongly agree'), and one item that asks participants to indicate the proportion of their assignments they would expect to consist of quotations or material taken directly from other sources. The SAQ gives scores on six scales:

1. *Confidence in writing*: five items (e.g. 'I enjoy writing in my own words') measuring the extent to which students know what it means to express an idea in their own words, enjoy doing so, and are confident about their writing.

2. *Understanding authorship*: two items (e.g. 'I know what the responsibilities of an author are') measuring the extent to which students understand what it means to be the author of a piece of written work.

3. *Knowledge to avoid plagiarism*: three items (e.g. 'I know how to show which parts of my assignment were not written by me') measuring the extent to which students know how to provide citations and references, and are confident they will not be accused of plagiarism.

4. *Top-down approach to writing*: two items (e.g. 'When writing an assignment I begin by thinking about what I want to say, and then look for evidence relating to that') measuring the extent to which students believe that writing is about making arguments based on their own thoughts.

5. *Bottom-up approach to writing*: two items (e.g. 'When writing an assignment I begin by looking for material I can include and then think about how I can put it together') measuring the extent to which students approach writing by first looking for material and then thinking about how to arrange it.

6. *Pragmatic approach to writing*: four items (e.g. 'I get better marks when I use more material taken directly from books, journals or the internet in my assignments') measuring the extent to which students use more secondary material to improve their grades or save time.

Scale scores are computed as the sum of the scores for the items making up each scale, divided by the number of items. Certain items are reverse-scored so that higher scores for each scale represent greater propensity towards the attributes and strategies described by the scales. For scales 1 to 4, higher scores indicate greater authorial identity and lower risk of unintentional plagiarism. For scales 5 and 6, higher scores indicate less authorial identity and greater risk of unintentional plagiarism. For the selection of dyslexic students for interviews, a total score was calculated as the sum of the scores for scales 1-4, minus the scores for scales 5 and 6. Those with scores in the top and bottom 10% of the sample distribution of total scores were invited to be interviewed.

Details of the SAQ development, factor structure and internal reliability are given in Pittam et al.'s (2009) analysis of data from 318 students. The scales are not independent of one another (they were identified from a factor analysis with oblique rotation, which allows inter-correlation), and there were indeed inter-correlations, including positive correlations among the confidence in writing, understanding authorship, and knowledge to avoid plagiarism scales, and a positive correlation between the bottom-up and pragmatic scales (Pittam et al., 2009).

The top-down, bottom-up and pragmatic scales were described as 'broad strategies or approaches to writing' (Pittam et al., 2009, p. 164). These do not represent mutually exclusive approaches to writing, and would be expected to overlap and vary from one writing assignment to another, in the same way that approaches to learning vary according to context (Ross et al., 2006).

Of the scales with more than two items, internal reliability was good for confidence in writing and knowledge to avoid plagiarism, but lower for the pragmatic approach to writing (Pittam et al., 2009). Scale validity was supported by the fact that second year students scored higher than first years for confidence in writing and knowledge to avoid plagiarism (Pittam et al., 2009), and all of the scores changed significantly in the expected direction following an instructional intervention designed to promote students' authorial identity (Elander et al., 2010).

Approaches and study skills inventory for students (ASSIST)

The ASSIST is an inventory of learning preferences and approaches. Part B is a questionnaire about approaches to learning, comprising 52 statements with 5-point Likert-type response scales ranging from 1 (disagree) to 5 (agree). Scores are computed for 13 subscales and three scales. Subscale scores each comprise the sum of four items. Scale scores comprise the sums of subscale scores. For this study the three scale scores were employed.

The deep approach scale is comprised of four subscales: seeking meaning, relating ideas, use of evidence, and interest in ideas. The surface-apathetic approach scale is comprised of four subscales: lack of purpose, unrelated memorising, syllabus-boundness, and fear of failure. The strategic approach scale is comprised of five subscales: organised studying, time management, alertness to assessment demands, achieving, and monitoring effectiveness. The development of the inventory is described by Tait et al. (1998), and several large sample studies have supported its factor structure and internal reliability (Byrne et al., 2004a; Entwistle et al., 2000), and there is evidence of associations between ASSIST scores and student grade achievement (Byrne et al., 2004b; Hughes & Peiris, 2006).

Procedure

The dyslexic students were recruited through the University Student Support Service, which distributed invitations to participate to eligible students. The non-dyslexic students were recruited by an advertisement in a University common area inviting eligible students to participate. Questionnaires were completed in a quiet room in the University library.

The interviews with dyslexic students were semi-structured, with the same schedule of core questions used for each. Students were asked about their understanding of the concepts of 'author' and 'authorship'; about their identification with the role of author when writing university assignments; and about ways that dyslexia affected their approach to writing university assignments, their sense of themselves as authors, and their approaches to avoiding plagiarism.

The interviews were audio-recorded and transcribed, and the transcripts were analysed using a six-phase thematic analysis that involved reading and re-reading the transcripts to familiarise with the data, generating initial codes, identifying potential themes, reviewing those themes, defining and specifying the themes, and describing the themes in a written report (Braun & Clarke, 2006). The transcripts from students with high and low total SAQ scores were first analyzed separately to identify potentially contrasting themes, following a process employed previously in qualitative educational research to make comparisons between the understandings of university tutors versus students (Harrington et al., 2006), and between the experiences of students in further education versus higher education (Jessen & Elander, 2009). This involved identifying and contrasting dominant themes from each separate set of transcripts. A dominant theme was one that was found in a majority of the transcripts and to which a contradictory or opposite view was not found within that set of transcripts. If contrasting dominant themes were not identified in that way, the two sets of transcripts were then re-analyzed together and the themes identified in each were reviewed, to refine and specify common themes across all the transcripts.

Results

Questionnaire scores

Table 2 shows SAQ and ASSIST scores for dyslexic and non-dyslexic students. The SAQ mean scores were similar to those reported for a larger sample of undergraduates (Pittam et al., 2009). Of the SAQ scores, dyslexic students scored significantly lower than non-dyslexics for confidence in writing and understanding authorship. Of the ASSIST scores, dyslexic students scored significantly higher for surface approaches to learning and significantly lower for strategic approaches to learning.

There were no significant gender differences for any of the SAQ or ASSIST scores among the dyslexic or non-dyslexic students, or the combined sample (T values ranged from 0.00 to 1.64, with p > 0.10 in every case).

To examine potential differences between subject areas, we used one-way Analysis of Variance to compare the SAQ and ASSIST scores of students in the four subject areas with more than three students per subject (7 education studies, 11 psychology, 16 law, and 17 joint honours students). Those groups differed significantly only for a deep approach to learning ($F_{(3, 47)} = 4.03$, $p = 0.012$). The group mean scores for a deep approach to learning were education studies 54.3 (SD 10.1); psychology 67.5 (SD 6.2); law 60.0 (SD 8.8); joint Honours 57.9 (SD 9.4). Post-hoc Sheffe tests showed that the only groups that differed significantly from one another were education studies and psychology (mean difference 13.2, SE 4.20, p = 0.029).

Table 2. Mean (SD) SAQ and ASSIST scores among dyslexic and non-dyslexic students

	Dyslexic	Non-dyslexic	T
SAQ scores			
Confidence in writing	3.16 (0.53)	3.58 (0.72)	2.60*
Understanding authorship	3.11 (1.09)	3.71 (1.07)	2.17*
Knowledge to avoid plagiarism	3.88 (0.85)	4.02 (0.76)	0.68
Top-down approach to writing	3.61 (0.76)	3.42 (0.79)	0.99
Bottom-up approach to writing	3.30 (0.69)	3.50 (0.79)	1.03
Pragmatic approach to writing	2.70 (0.62)	2.52 (0.85)	0.94
ASSIST scores			
Deep approach to learning	58.62 (9.27)	60.39 (9.37)	0.75
Surface approach to learning	55.19 (7.61)	48.94 (12.85)	2.33*
Strategic approach to learning	66.42 (13.81)	73.48 (11.15)	2.22*

* $p < 0.05$ (two-tailed)

The correlations among SAQ and ASSIST scores and age are given in table 3, which shows correlations for the dyslexic and non-dyslexic students separately and combined. The predicted correlations between SAQ and ASSIST scores among non-dyslexic students (shown in bold) were all non-significant. The only significant correlations between approaches to writing and approaches to learning were those between a pragmatic approach to writing and a deep approach to learning, which were negatively correlated among non-dyslexic students, and between a pragmatic approach to writing and a surface approach to learning, which were positively correlated among both dyslexic and non-dyslexic students.

Apart from the positive correlation between a pragmatic approach to writing and a surface approach to learning, there were just three other pairs of variables that were significantly correlated in both samples. These were the negative correlation between confidence in writing and a pragmatic approach to writing, the positive correlation between understanding authorship and knowledge to avoid plagiarism, and the positive correlation between a deep approach to learning and a strategic approach to learning.

There were 14 significant correlations among SAQ and ASSIST scores for non-dyslexic students, compared with just six for dyslexic students (excluding correlations with age). Among non-dyslexic students, age was significantly correlated with confidence in writing, understanding authorship, and a deep approach to learning, whereas among dyslexic students, age was significantly correlated only with knowledge to avoid plagiarism.

Table 3 also shows the results of tests of the difference between correlations for dyslexic and non-dyslexic students, using the Fisher r to z transformation (http://faculty.vassar.edu/lowry/rdiff.html). Age and a deep approach to learning were more positively correlated among non-dyslexic students. Knowledge to avoid plagiarism and a top-down approach to writing were more positively correlated among dyslexic students. Knowledge to avoid plagiarism and a bottom-up approach to writing were more positively correlated among non-dyslexic students. A deep approach to learning and a surface approach to learning were more negatively correlated among non-dyslexic students. A surface approach to learning and a strategic approach to learning were more negatively correlated among non-dyslexic students.

Table 3. Correlations among age, SAQ and ASSIST scores for dyslexic, non-dyslexic (italicised) and combined (underlined) samples (hypothesised correlations are shown in bold)

	1	2	3	4	5	6	7	8	9
1. Age									
2. Confidence in writing	0.32								
	*0.46**								
	0.43**								
3. Understanding authorship	0.22	0.29							
	0.36	*0.44*							
	0.31*	0.42**							
4. Knowledge to avoid plagiarism	0.53**	0.37*	0.46*						
	0.22	*0.07*	*0.41*						
	0.37**	0.21	0.44***						
5. Top-down approach to writing	0.14	0.11	0.10	0.40*					
	-0.04	*0.15*	*0.07*	*-0.19[b]*					
	0.02	0.08	0.05	0.10					
6. Bottom-up approach to writing	0.27	0.14	0.14	0.22	0.34				
	0.22	*0.12*	*0.43*	*0.69***[c]*	*0.05*				
	0.26*	0.16	0.31*	0.46***	0.17				
7. Pragmatic approach to writing	0.24	-0.41*	-0.004	0.03	-0.20	0.05			
	-0.24	*-0.74***	*-0.25*	*0.19*	*-0.19*	*0.16*			
	-0.07	-0.62***	-0.17	0.10	-0.18	0.10			
8. Deep approach to learning	0.14	0.31	0.30	0.13	0.23	0.17	-0.15		
	*0.70***[a]*	*0.67***	*0.61***	*0.30*	***0.09***	*0.23*	*-0.40*		
	0.45***	0.52***	0.47***	0.22	0.15	0.21	-0.30*		
9. Surface approach to learning	0.16	-0.32	0.10	0.19	0.15	0.19	0.37*	0.08	
	-0.12	*-0.50**	*-0.34*	*-0.11*	*-0.04*	***-0.11***	*0.45*	*-0.47**[d]*	
	-0.06	-0.49***	-0.23	-0.01	0.06	-0.05	0.44***	-0.27*	
10. Strategic approach to learning	0.03	0.15	0.31	0.09	-0.08	0.08	-0.13	0.51**	0.13
	0.29	*0.48**	*0.33*	*0.23*	*0.01*	*0.08*	***-0.29***	*0.62***	*-0.45*[e]*
	0.18	0.37**	0.37**	0.16	-0.07	0.11	-0.12	0.56***	-0.26*
	1	2	3	4	5	6	7	8	9

Notes:

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed).

a. Dyslexic vs. non-dyslexic difference z = 2.72, p = 0.0065 (two-tailed).

b. Dyslexic vs. non-dyslexic difference z = 2.30, p = 0.0214 (two-tailed).

c. Dyslexic vs. non-dyslexic difference z = 2.34, p = 0.0193 (two-tailed).

d. Dyslexic vs. non-dyslexic difference z = 2.21, p = 0.0271 (two-tailed).

e. Dyslexic vs. non-dyslexic difference z = 2.30, p = 0.0214 (two-tailed).

Thematic analysis

There were no clear contrasts between the dominant themes that emerged from the separate analyses of the transcripts of dyslexic students with high and low SAQ scores. (Nor did we observe striking contrasts between the transcripts of male and female dyslexic students, or between those of students studying different subjects.) Three themes emerged from the analysis of both sets of transcripts combined. These were authorial identity, dyslexia and writing, and dyslexia and plagiarism. In the narrative account below, brief extracts from the interview transcripts are used to illustrate the meaning of those themes.

Authorial identity

Students' views were mixed about what they saw as an author, although the views that were offered did not differ according to whether students had high or low SAQ scores. Some gave descriptions that referred to the writers of books and published works, or being qualified in some way for that role:

"It ['author'] means err, a person who has written a book whether it be a novel or a piece of academic work or a journal, that's basically it." (Becky)

"Err, it would mean to me that, err, somebody has gained some sort of qualification really by writing something whether it be academic or whether it be a book a journal." (John)

"I suppose the concept 'author' means to me someone who's written a book or who has had some work published." (Steve)

Other students gave descriptions of the role of author that focused more on the task of writing and taking ownership of the work:

"Someone who produces a piece of work from their own memory, which is made up from their own ideas, sometimes based but not exactly the same as someone else's." (David)

"That means to me somebody that's produced a piece of work whether it be a book, a journal or poetry, and it's their own work, it's not anybody else's work, it's their own." (Jayne)

"Err, someone that can articulately put a piece writing together, err, explain the concept and err, obviously portray what their reader wants to know, and explain what you actually intend to put across to the reader." (Gemma)

None of the students described feeling like an author when working on university assignments, but the reasons they gave were not related to dyslexia. Some of the reasons given related to the identification of authors with book writing, and the perceived novice status associated with being a student:

"No not at all I'm not an author, like I say someone who's an author to me is someone who's wrote a book and I haven't written any books." (Steve)

"I really don't feel like an author. […] Because I feel I'm sort of still on a learning process, and I'm not academically aware enough and I don't think I'm good enough." (Becky)

"No, whenever I'm reading journals and stuff like that I always think, you know, they are authors because they've gone through that, you know, qualification and they've had all that experience and stuff and I certainly don't think of that about myself, no." (John)

Other reasons for not feeling like an author when working on university assignments related to the requirements to reference the work of others in their assignments:

"Not really no, because we're not able to put our own ideas down. We're not able to put our own concepts down, we have to go by the literature that we're told to use or that's resourced, and we can't put anything in our assignments that hasn't been sourced and documented and obviously referenced." (Gemma)

"No not really because we have to use other people's material to get our argument down for the questions we have for particular assignments so, no not really, because we're using other people's work." (Jayne)

Dyslexia and writing

Students also had a range of views about links between dyslexia and writing, with no clear differences between those with high and low SAQ scores. Some focused on the fact that dyslexia made the task of writing more difficult:

"… and I think the fact that being dyslexic obviously affects the way you write because I think personally I don't have a great understanding of words. So if you don't have a great understanding of words obviously it's going to get more difficult, but you just have to work a lot harder and you have to sort of, you know, find ways around it. And again some people do use it as a crutch and think it's, erm, you know, 'I'm dyslexic so therefore I'll not do as well', when really we could, because if you just worked a bit harder we'd be far better." (David)

"… when I approach an assignment I have to do many plans, it takes me far longer to do, to actually understand what it is that the question is asking. […] and then obviously putting the assignment together with regards to structure, and err, the wording is also a problem so therefore you've got to do it first and then obviously you backtrack and put things in different places and allsorts, so it does have an effect on every part of your life regarding writing assignments for University." (Gemma)

"Err, I'm not very confident in my writing. I know what I want to put down but I find it very difficult to put my ideas and information down, I find that very hard and to organize it so it reads well and is consistent." (Jayne)

Two of the students described how their confidence in writing depended on the topic and their understanding of it:

"I'm not very confident at all and I don't really enjoy writing, but saying that, it all depends on what topic I'm covering and if I enjoy the subject and topic then I find it easier to write about it than when it's really hard to grasp and understand; then I find it hard." (Steve)

"Err, I'm confident once I've got the concept, err, and I really enjoy it if I enjoy the subject, if it's something I don't understand and particularly with jargon and particularly with terminology of that particular module or whatever, that's what I find difficult." (John)

Dyslexia and plagiarism

Asked about whether they believed dyslexia made it harder for students to avoid plagiarism, views were again mixed, and again there were no clear differences between the views of those with low and high SAQ scores. Some saw dyslexia as increasing the risk of unintentional plagiarism:

"Definitely because when being dyslexic, err, obviously you have read, read and read the same piece of literature which then obviously is very hard to put into your own words when you've already read it and when you can actually see what's happening, err, so yes it is, plagiarism is a hard thing to get round, because when you obviously read about what someone else has written, that's what you've read, and how do you then transcribe it into your own words? And if you do, is it then plagiarism? Because you've used parts of it. So the concept of plagiarism is obviously a worry, err, and being a dyslexic you can plagiarize without even really knowing or understanding what you've done." (Gemma)

"… there are some aspects of dyslexia that you just can't get, for instance missing out words, or, err, not being able to put your ideas down. Once I've read something I feel that's the only way it should be read, does that make sense?" (John)

Some of the students thought that dyslexia made plagiarism easier to avoid:

"I think dyslexia makes it easier to avoid, because personally for me I'm more aware of what I'm writing now than ever before. So I'm more aware of how I'm wording things where maybe before I wasn't, I was just chucking down, chucking words down but now I'm more aware of what I'm actually putting onto the paper, so I'm more aware of how I'm phrasing things, how I'm paraphrasing, err, so I think it makes it easy to avoid." (Becky)

Some of the students argued that understanding the concept of plagiarism was unaffected by dyslexia:

"I think the problem with plagiarism is a lot of people don't really understand what plagiarism is for a start. And if they don't understand the basic concept then they don't know whether they're plagiarising someone else's work or not. But from a dyslexic point of view I don't think it makes a difference, because I think if you have an understanding of what it is then you shouldn't be taking somebody else's work." (David)

"Err, I don't think it makes it easier or more difficult. I think as long as you understand the concept of plagiarism, then it shouldn't make a difference whether you're dyslexic or not with plagiarism. I find it harder to paraphrase but with the understanding of plagiarism no, no." (Jayne)

"I don't think plagiarism's got anything to do with being dyslexic, you either understand the concept of plagiarism or you don't. Err, whether you're dyslexic or not that shouldn't stop the understanding of the word, if you're like me and have trouble understanding words, then you

just have to find the meanings out. But saying that, they make it plain and clear what plagiarism is and the consequences of doing it. So no, being dyslexic isn't an excuse to plagiarize." (Steve)

Discussion

Dyslexic students scored lower than non-dyslexic students for confidence in writing and understanding authorship, indicating that dyslexic students are relatively disadvantaged in how they see and feel about themselves as authors. Dyslexic students also scored higher for surface approaches to learning and lower for strategic approaches to learning, indicating relative disadvantages in approaches to learning. However, there were no differences in deep approaches to learning, so these findings differ in that respect from those of Kirby et al. (2008), who found marginally higher scores for deep approaches to learning among dyslexic students.

The predicted correlations between approaches to writing and approaches to learning among non-dyslexic students were not significant, indicating no direct correspondence between a top-down approach to writing and a deep approach to learning, a bottom-up approach to writing and a surface approach to learning, or a pragmatic approach to writing and a strategic approach to learning. The only significant correlations between approaches to writing and approaches to learning involved a pragmatic approach to writing, which was negatively correlated with a deep approach to learning among non-dyslexic students, and positively correlated with a surface approach to learning among both dyslexic and non-dyslexic students.

A pragmatic approach to writing involves including more secondary material in order to save time or obtain better marks, and those correlations seem to show that this approach is one of the ways that a surface approach to learning is contextualised in the domain of academic writing. This is not surprising, and is consistent with research on compositional styles. Lavelle (1993), for example, found that a 'low self-efficacy' compositional style was negatively correlated with deep learning. However, more research is needed on ways that students' approaches to learning are translated into approaches to writing.

Two of the correlations that differed significantly between dyslexic and non-dyslexic students involved surface approaches to learning, which was more negatively correlated with both deep and strategic approaches to learning among non-dyslexic students. Those negative correlations make intuitive and theoretical sense, and may indicate greater congruence among approaches to learning among non-dyslexic students compared with dyslexic students.

Confidence in writing and understanding authorship, the scales on which dyslexic students scored lower than non-dyslexics, were correlated with one another, and both were correlated with a deep approach to learning, but only among non-dyslexic students. Age was correlated with confidence in writing, understanding authorship, and a deep approach to learning, but only among non-dyslexic students. Again, those correlations are intuitively plausible and may reflect greater congruence between approaches to writing and approaches to learning among non-dyslexic students, consistent with Kirby et al.'s (2006) observation that specific learning strategies were less congruent with broader approaches to learning among dyslexic students.

The correlations that were significant only among non-dyslexic students could also be interpreted in terms of 'study orchestrations', which means the extent to which study behaviours are consistent with more general beliefs and attitudes. 'Dissonant' study orchestrations occur, for example, when students' study behaviours are not consistent with their beliefs and attitudes about learning

(Meyer, 2000). The pattern of correlations that was present only among non-dyslexic students may suggest more dissonant study orchestrations among dyslexic students.

Knowledge to avoid plagiarism was not significantly lower on average among dyslexic students, but was involved in two of the correlations that differed between dyslexic and non-dyslexic students, being more positively correlated with a top-down approach to writing among dyslexics, and more positively correlated with a bottom-up approach among non-dyslexics. Knowledge to avoid plagiarism was also significantly correlated with age and confidence in writing among dyslexic but not non-dyslexic students.

This seems to suggest that (self-rated) knowledge to avoid plagiarism (knowledge about referencing and citation, for example) may play an especially important role in academic writing for dyslexic students. Among dyslexic students, knowledge to avoid plagiarism was associated with developing arguments based on one's own thoughts (a top-down approach), and increased with age and confidence in writing, whereas among non-dyslexic students it was associated with seeking content material first, then considering how to put it together in the form of an assignment (a 'bottom-up' approach). If self-rated knowledge to avoid plagiarism enables dyslexic students to be more confident in writing and adopt a deeper (top-down) approach to writing, it may be a useful focus for writing interventions designed specifically for dyslexic students.

A previous study showed that dyslexic students had higher levels of academic anxiety than non-dyslexic students (Carroll & Iles, 2006), and it is possible that some dyslexics students' anxiety about writing and plagiarism manifests itself in the relationships we observed among dyslexic students between knowledge to avoid plagiarism and both confidence in writing and a top-down approach to writing. Perhaps anxiety about avoiding plagiarism inhibits certain dyslexic students from adopting a more authorial, top-down approach to writing. Causation could be in the other direction, with increasing confidence in writing and adoption of a top-down approach leading to reduced anxiety about avoiding plagiarism, but in either case it seems likely that helping dyslexic students to feel more confident about avoiding plagiarism could also help them to develop a stronger sense of authorial identity as academic writers.

Academic writing skills have been identified as an area of unmet need for dyslexic students in higher education (Mortimore & Crozier, 2006), and that is supported by our findings of lower confidence in writing and understanding of authorship among dyslexic students. Previous interventions aiming to improve students' authorial identity were delivered to unselected students, and future research could assess whether interventions like those evaluated by Elander et al. (2010) are as helpful for dyslexic students as they appeared to be for unselected students. If so, academic writing development initiatives for dyslexic students might make greater use of the authorial identity approach. If not, they may need to be tailored specifically for dyslexic students, perhaps by focusing on aspects such as knowledge to avoid plagiarism.

One issue that findings like these leave open, however, is whether dyslexic students' apparent lack of congruence between different aspects of learning and writing represents disadvantages associated with dyslexia that interventions should seek to correct, or adaptive compensatory strategies that interventions should seek to support and develop. The apparent lack of congruence among dyslexic students may also reflect variability among dyslexic students in severity and/or type of dyslexia, as well as differences in how students respond to and adapt to their dyslexia. For those reasons, more research is needed on the ways that dyslexic students develop characteristic approaches to academic writing, and

what the implications are of differences between dyslexic and non-dyslexic students' approaches to writing.

We did not identify qualitative differences between the attitudes and beliefs of dyslexic students with low and high authorial identity scores, which may perhaps reflect the relative lack of congruence between aspects of learning and writing among dyslexic students that was noted in the correlational analysis. All the dyslexic students agreed that dyslexia made writing more difficult and reduced their confidence in writing university assignments, but they had different views about how dyslexia could affect the risk of plagiarism, with some believing that it increased the risk, and others seeing plagiarism as unrelated to dyslexia.

However, the qualitative data provided useful examples of concrete difficulties that dyslexic students experience with writing that could help to explain their lower levels of confidence in writing. These included difficulties with organising essays and expressing ideas in writing, consistent with Mortimore and Crozier's (2006) survey findings, such as Jayne's comment that "I know what I want to put down but I find it very difficult to put my ideas and information down". There was also some evidence of use of compensatory strategies, such as David's comment that 'you just have to work a lot harder and you have to, sort of, you know, find ways around it', and Gemma's comment that 'the wording is also a problem so therefore you've got to do it first and then you backtrack and put things in different places and allsorts'

In many ways the experiences described by the dyslexic students resembled very closely those of a larger and unselected sample of students interviewed previously. This includes the lack of spontaneous identification with the role of author, the identification of authorship with the writers of published books and articles, the way students often struggle to find an original form of words to describe what they have read about, and students' perceptions that the requirements to cite evidence and reference their reading in university assignments was an obstacle to adopting an authorial role (Pittam et al., 2009). It is possible, therefore, that the difficulties experienced by dyslexic students with academic writing and plagiarism may be more severe forms of those experienced by students more generally.

Dyslexic students' writing is a complex phenomenon because dyslexic students do not all respond to the challenges of academic writing in the same ways, and because certain aspects of writing may be affected by deliberate strategies to compensate for other effects of dyslexia. It is probably unwise to drawn strong inferences from different patterns of association between measures among dyslexic and non-dyslexic groups, or from the absence of consistent or contrasting themes in the qualitative analysis. However, the present findings are consistent with previous research on dyslexic writing, which had suggested that the main direct effects of dyslexia were on low-level aspects of writing, such as writing speed and spelling errors (Connelly et al., 2006; Erskine et al., 1999; Stirling et al., 1998; Wengelin, 2007), but that higher level aspects of writing could be affected by the diversion of cognitive resources to lower level aspects of writing (Wengelin, 2007).

Studies of dyslexic students' *perceived* difficulties identified problems with 'organization of essays' and 'expressing ideas in writing' (Mortimore & Crozier, 2006), whereas those of the writing *actually produced* by dyslexic students did not find differences from non-dyslexic students in 'organisation and coherence' or 'ideas and development' (Connelly et al., 2006). Given the consistent findings about dyslexic students' slower writing speed, it seems quite plausible that one compensatory strategy is simply writing more slowly and spending more time and effort on checking, editing, and revision, and our qualitative data are also consistent with that.

Textual demonstration of the core high level characteristics of good academic writing, such as critical thinking, use of language, structuring and argument, require complex skills that are a blend of generic skills, deep approaches to learning, and complex learning (Elander et al., 2006), so it would not be surprising if dyslexic students found different and variable strategies to compensate for low level writing difficulties. Perhaps one worthwhile avenue for further research on dyslexic students' writing and compensatory strategies would be to interview students about their writing strategies and analyse the writing produced by the same students. This approach has been employed successfully in studies of how the structure and content of student essays were related (Prosser & Webb, 1994), and could be adapted to examine how dyslexic students undertake academic writing in order to compensate for the effects of dyslexia.

The study has a number of limitations that should be kept in mind. First, the sample in the quantitative part of the study was relatively small, meaning that generalisations should be treated with caution, although small samples are by no means unusual in studies of dyslexic students' writing. Second, the non-dyslexic sample was not matched for reading and/or spelling ability, which could help to identify group differences that are due to dyslexia per se rather than levels of reading or writing skill. Again, however, spelling ability-matched comparison groups were rarely used in previous studies of dyslexic writing (Connelly et al., 2006, is one that did match for spelling ability), but they could help in future research on dyslexics students' use of compensatory strategies in academic writing.

Third, the dyslexic sample had a higher proportion of males than would be expected in dyslexia, although again, this is not unprecedented in previous research. For example, in Connelly et al.'s (2006) study, 18 of the 21 students with dyslexia were female. In the present study, where dyslexic students were recruited though the University department providing dyslexia support, anecdotal indications were that male students with dyslexia were less likely than females to wish to seek University-based support, so it is possible that gender differences in help-seeking affected the sample composition.

Fourth, there may well be potential for improvement on the current SAQ as a measure of constructs related to student authorial identity, especially in terms of its reliance on self-assessments of knowledge and understanding. For the present, however, the development and status of the SAQ has been well documented (Elander et al., 2010; Pittam et al., 2009), and this is the best available measure of student authorial identity.

The findings illustrate the value of the authorial identity approach in research on student writing, and point to ways that approaches to academic writing may differ between dyslexic and non-dyslexic students. This includes the possibility of a lack of congruence between different aspects of learning and writing, possibly as a consequence of strategies to compensate for the direct effects of dyslexia, and greater salience of knowledge to avoid plagiarism among dyslexic students. Further research could focus on how dyslexic students assess their own knowledge to avoid plagiarism, and how that may affect their approaches to writing, as well as developing and evaluating interventions to improve dyslexic students' confidence in writing and understanding of authorship.

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References

Abasi, A.R., Akbari, N., & Graves, B. (2006). Discourse appropriation, construction of identities, and the complex issue of plagiarism: ESL students writing in graduate school. *Journal of Second Language Writing*, 15, 102-117.

Ashworth, P., Bannister, P., & Thorne, P. (1997). Guilty in whose eyes? University students' perceptions of cheating and plagiarism in academic work and assessment. *Studies in Higher Education* 22, 187-203.

Biggs, J.B. (1993). What do inventories of students' learning processes really measure? A theoretical review and clarification. *British Journal of Educational Psychology*, 63, 1-17.

Biggs, J., Kember, D., & Leung, D.J.P. (2001). The revised two-factor study process questionnaire (R-SPQ-2F). *British Journal of Educational Psychology*, 71, 133-149.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology,* 3, 77-101.

Byrne, M., Flood, B., & Willis, P. (2004a). Validation of the approaches and study skills inventory for students (ASSIST) using accounting students in the USA and Ireland: a research note. *Accounting Education*, 13, 449-459.

Byrne, M., Flood, B., & Willis, P. (2004b). Using the student learning framework to explore the variation in academic performance of European business students. *Journal of Further and Higher Education*, 28, 67-78.

Carroll, J.M., & Iles, J.E. (2006). An assessment of anxiety levels in dyslexic students in higher education. *British Journal of Educational Psychology*, 76, 651-662.

Cherry, R. (1988). Ethos versus persona: self-representation in written discourse. *Written Communication*, 5, 251-276.

Connelly, V., Campbell, S., MacLean, M., & Barnes, J. (2006). Contribution of lower order skills to the written composition of college students with and without dyslexia. *Developmental Neuropsychology*, 29, 175-196.

Elander, J., Harrington, K., Norton, L. Robinson, H., & Reddy, P. (2006). Complex skills and academic writing: a review of evidence about the types of learning required to meet core assessment criteria. *Assessment and Evaluation in Higher Education*, 31, 71-90.

Elander, J., Pittam, G., Lusher, J., Fox, P., & Payne, N. (2010). Evaluation of an intervention to help students avoid unintentional plagiarism by improving their authorial identity. *Assessment and Evaluation in Higher Education*, 35, 157-171.

Entwistle, N., Tait, H., & McCune, V. (2000). Patterns of response to an approaches to studying inventory across contrasting groups and contexts. *European Journal of Psychology of Education*, 15, 33-48.

Entwistle, N., & Waterston, S. (1988). Approaches to studying and levels of processing in university students. *British Journal of Educational Psychology*, 58, 258-265.

Erskine, J. (1999). Group and individual differences in the local level writing strategies of adult dyslexics attending higher education. In S. Strömqvist & E. Ahlsén (Eds.), *The Process of Writing - A Progress Report* (pp. 103-118). Gothenburg Papers in Theoretical Linguistics, vol. 83. Gothenburg University, Department of Linguistics.

Harrington, K., Elander, J., Norton, L., Reddy, P., Aiyegbayo, O., & Pitt, E. (2006). A qualitative analysis of staff-student differences in understandings of assessment criteria. In C. Rust (Ed.), *Improving Student Learning Through Assessment: Proceedings of the 2005 13th International Symposium* (pp. 235-247). Oxford: Oxford Centre for Staff and Learning Development.

Hatcher, J., Snowling, M.J., & Griffiths, Y.M. (2002). Cognitive assessment of dyslexic students in higher education. *British Journal of Educational Psychology*, 72, 119-133.

Higher Education Statistics Agency (HESA) (2010). Table 11b - First year UK domiciled HE students by qualification aim, mode of study, gender and disability 2006/07. http://www.hesa.ac.uk/ [Accessed 28th April 2010].

Howard, R.M. (1995). Plagiarisms, authorships and the academic death penalty. *College English*, 57, 788-806.

Hughes, J., & Peiris, D.R. (2006). ASSISTing CS1 students to learn: learning approaches and object-oriented programming. *Proceedings of the 11th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education* (pp. 275-279). New York, NY: ACM.

Ivanic, R. (1995). Writer identity. *Prospect*, 10 (1), 8-31.

Ivanic, R. (1998). *Writing and Identity: The Discoursal Construction of Identity in Academic Writing*. Amsterdam: Benjamin.

Jessen, A., & Elander, J. (2009). Development and evaluation of an intervention to improve Further Education students' understanding of Higher Education assessment criteria: three studies. *Journal of Further and Higher Education*, 33, 359-380.

Kirby, J.R., Silvestri, R., Allingham, B.H., Parrila, R., & Lafave, C.B. (2008). Learning strategies and study approaches of postsecondary students with dyslexia. *Journal of Learning Disabilities*, 41, 85-96.

Lavelle, E. (1993). Development and validation of an inventory to assess processes in college composition. *British Journal of Educational Psychology*, 63, 489-499.

Lavelle, E., & Zuercher, N. (2001). The writing approaches of university students. *Higher Education*, 42, 373-391.

Marton, F., & Saljo, R. (1976). On qualitative differences in learning 1. Outcome and process. *British Journal of Educational Psychology*, 46, 115-127.

Meyer, J.H.F. (2000). The modelling of 'dissonant' study orchestration in higher education. *European Journal of Psychology of Education*, 15, 5-18.

Mortimore, T., & Crozier, W.R. (2006). Dyslexia and difficulties with study skills in higher education. *Studies in Higher Education*, 31, 235-251.

Pittam, G., Elander, J., Lusher, J., Fox, P., & Payne, N. (2009). Student beliefs and attitudes about authorial identity in academic writing. *Studies in Higher Education*, 34, 153-170.

Prosser, M., & Webb, C. (1994) Relating the process of undergraduate essay writing to the finished product, *Studies in Higher Education,* 19, 125-138.

Read, B., Francis, B., & Robson, J. (2001). 'Playing safe': Undergraduate essay writing and the presentation of the student 'voice'. *British Journal of Sociology of Education* 22, 387-99.

Richardson, J.T.E. (2009). The academic attainment of students with disabilities in UK higher education. *Studies in Higher Education*, 34, 123-137.

Richardson, J.T.E., & Wydell, T.N. (2003). The representation and attainment of students with dyslexia in UK higher education. *Reading and Writing: An Interdisciplinary Journal*, 16, 475-503.

Ross, M.E., Green, S.B., Salisbury-Glennon, J.D., & Tollefson, N. (2006). College students' study strategies as a function of testing: An investigation into metacognitive self-regulation. *Innovative Higher Education*, 30, 361–375.

Sterling, C. M., Farmer, M., Riddick, B., Morgan, S., & Matthews, C. (1998). Adult Dyslexic Writing. *Dyslexia*, 4, 1-15.

Tait, H., Entwistle, N. J., & McCune, V. (1998). ASSIST: a reconceptualisation of the *Approaches to Studying Inventory.* In C. Rust (ed.) *Improving students as learners.* Oxford: Oxford Brookes University. Oxford Centre for Staff and Learning Development.

Torrance, M., & Jeffery, G.C. (1999). Writing processes and cognitive demands. In M. Torrance & G.C. Jeffery (Eds.), *The Cognitive Demands of Writing* (pp. 1-11). Amsterdam: Amsterdam University Press.

Wengelin, A. (2007). The word-level focus in text production by adults with reading and writing difficulties. In G. Rijlaarsdam (Series Ed.) and M. Torrance, L. van Waes & D. Galbraith (Volume Eds), *Writing and Cognition: Research and Applications* (Studies in Writing, Vol. 20, pp. 67-82). Amsterdam: Elsevier.