

# E-portfolios and Personalized Learning: Research in Practice with Two Dyslexic Learners in UK Higher Education

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This paper analyses the use of an e-portfolio system in contributing to the personalized learning of two dyslexic learners at the University of Wolverhampton, UK. The rationale for this research rests at the intersection of generic findings from e-portfolio (and wider e-learning) research and the still challenging project in higher education (HE) of creating inclusive curricula. A qualitative, ethnographic approach was employed in a piece of collaborative research between academic staff and dyslexic learners. Two retrospective learner narratives were constructed and then reviewed by all co-authors in terms of the 'personalized fit' which they allowed with dyslexic thinking, learning and writing experience. The findings suggest a potential refinement of the general pedagogical claims about e-portfolio-based learning when considering dyslexic learners and thence the value of an enhanced prioritization of e-portfolio learning practices within inclusive HE curricula. The review and analysis also allow a 'critical' discussion of the practical and theoretical issues arising within this work. Copyright © 2010 John Wiley & Sons, Ltd.

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## INTRODUCTION

In this paper, we consider the opportunities offered for personalized learning by the introduction of e-portfolio-based learning within higher education (HE) programmes. In particular, we focus on the experience of two dyslexic learners during their study in the School of Education at the University of Wolverhampton, UK, between 2005 and 2008. Whilst in a fundamental sense all learning is personalized, in that the individual makes their own learning from any curriculum offered, here we focus on the extent to which the curriculum itself explicitly acknowledges and validates individual learning journeys and clarifies the role of interpersonal interactions within them. We argue here that the use of a personal learning environment such as PebblePad, which includes an e-portfolio system, provides an important intervention in these respects.

The rationale for undertaking this research was twofold: first, our interrogation of the interface between the research fields of inclusive pedagogy and e-learning had raised pressing questions about the implications for dyslexic learners. Hughes, along with writers such as Hayward, Blackmer and Canali (2008), had revealed the pedagogical potential of using e-portfolios with all learners (Hughes, 2008a, b, c). The emerging 'e-portfolio learning practices' included the enactment of new personal and professional identities, the possibility of orchestrating multiple selves within the digital space, the real life messiness of these processes and thence a more sophisticated notion of personalized learning. At the same time, Herrington had focused on inclusive practice in relation to dyslexic learners in HE and noted the shift from what can be described as an 'exclusive managerialism' in British universities in the 1990s (the individual provision of technology and other separate resources for dyslexic learners) to the bigger 21st century project of creating mainstream, inclusive curricula for all and a kind of 'inclusive managerialism' (HEA Inclusive Practice Programme, 2008; Herrington, 2008; Herrington & Simpson, 2002).

Both researchers hypothesized that the opportunities offered by e-portfolio learning practices were potentially profound for dyslexic learners. Herrington's preferred narrative of dyslexia as 'thinking and learning differences', best understood in terms of a social interactive model (Herrington, 2010; Herrington & Hunter-Carsch, 2001) rather than the often repeated lists of perceptual and processing deficits, evoked issues of diverse dyslexic identity; with unfolding, individual, stories of weaknesses or inefficiencies alongside powerful cognitive and sensory strengths (Brigden, 2001; Brigden & McFall, 2000; Griffin & Pollak, 2009; Hetherington, 1996; Stacey, 1997; Steffert, 1996, 1999). A system such as PebblePad (which offers scaffolds for creating reflective records of learning, achievement and aspiration) seemed particularly helpful for dyslexic learners as they sought to reframe past oppression and construct dyslexic identities which made sense to them and to others (Pollak, 2005, 2009). It appeared to offer digital 'safe' spaces for the enactment of new identities and for 'storying' such differences.

Further, 'inclusive managerialism' required some critiquing of those academic practices and academic literacies (Lea, 1999) which continue to 'construct' disability (McDonald, 2009). In the search for new literacy practices of equivalent value to existing HE traditions, the introduction of e-portfolio learning practices seemed to offer important possibilities, not only in customizing individual

learning journeys and extending learners' narrative capital and capability (Watts, 2008) but also in marking an important shift in the academic practices landscape.

The second driver added some urgency to this intellectual conjunction. The legislative imperative of 'promoting equality' (DDA, 2005) underlined the importance of establishing the significance of this curriculum innovation. It seemed vitally important to establish whether securing 'space' (values and processes) for personalized learning, could actually add depth and sophistication to inclusive pedagogy.

This paper first contextualizes the investigation with reference to the existing use of technology with dyslexic HE students and to the emerging evidence regarding e-portfolio practices. The experimental research methodology is then detailed and the findings analysed with reference to the following questions:

- How do dyslexic learners describe the benefits of this way of using e-portfolios in their academic thinking, learning, reading and writing?
- Do these benefits appear to be necessary, sufficient or merely desirable?
- Are the benefits exclusive to dyslexic students?

Our argument here is that innovatory e-portfolio-based learning offered two dyslexic learners unique opportunities to reconstruct themselves as able learners and the ensuing discussion explores the implications of this for the inclusion agenda.

## BACKGROUND

### Dyslexia, Technology and Inclusiveness

Prior to curriculum innovations/interventions such as the use of e-portfolio systems and accompanying learning practices, a wide range of technology had already been valuably employed by dyslexic learners in UK HE. While occasional commentaries highlighted the fact that the software had rarely been designed specifically for them, that technology was not equally suited to all dyslexic learners (Sanderson, 2000), and that the training in IT was not sufficiently student centred and dyslexia friendly, the overriding assumption was, as often with technology in general (Coyne, 2001), that it was 'a good thing'.

Dyslexic learners had, for example, found personal computers and word processing software particularly helpful for *writing* and, given that the e-portfolio system used here included its most useful features, we could safely predict benefits for dyslexic learners. Newer developments such as voice-activated software had also been taken up (Morgan, 1995). Though collectively these elements constituted a menu for learners in HE, their use varied greatly among dyslexic learners and individual accounts of their significance provided vital evidence about their role in personalizing learning. For example, a dyslexic HE student recently noted the relative impact of visual disturbance for her between reading on screen and on paper (French & Herrington, 2008).

All of these developments had focused on enabling the individual learner to personalize their learning in academic contexts. However, the push for more inclusive curriculum design and process was also underway. With regard to technology, academic staff increasingly used Virtual Learning Environments

alongside or interwoven with physical environments, which often gave the learner a greater control over time in relation to learning (Neher, 2002). The internet was used to create multimodal presentations which could be more closely aligned to some dyslexic ways of thinking. Use of technology, and especially developments in e-learning were therefore changing the HE landscape dramatically and though some research had considered the impact of this changing landscape on dyslexic learners (Woodfine, Baptista Nunes, Wright, 2005), the full implications have yet to be worked through. It is within such a context that e-portfolios were introduced.

## E-portfolios

The contexts and drivers for this rapidly developing international field have been fully documented elsewhere (Beetham, 2005; Hartnell-Young *et al.*, 2007; Richardson & Ward, 2005; Ward & Richardson, 2005) but it is important, for our purposes, to note the key distinction within the field between e-portfolio as an assessed product and e-portfolio as a tool for learning (Barrett & Carney, 2005). UK researchers, in particular, have focused on the latter: a recent Joint Information Systems Committee publication (JISC, 2008) on the effective use of e-portfolios claimed that such tools can have a powerful impact on learner understanding of self, motivation, personalizing curriculum and reflective practice.

Even so, within this landscape, the notion of what an e-portfolio is and what it might be for, is still in flux. At one end of the spectrum it is '*an e-collection of stuff*' (Sutherland, 2007). At the other, e-portfolios have the potential '*for telling myriad stories to diverse audiences*' (Sutherland, 2004). More recently, however, the HEA Centre for Recording Achievement (CRA, 2008), has suggested the importance of retaining a broader vision of e-portfolio as:

*a repository, a means of presenting oneself and ones skills, qualities and achievements, a guidance tool, a means of sharing and collaborating and a means of encouraging a sense of personal identity.*

Our perception is that such a vision allows both assessment of and for learning (product and process) and so share Cambridge's (2008) view of e-portfolios as '*a genre and a set of practices supported by a set of technologies...(for)... collecting evidence in authentic activity, reflecting upon that evidence and interacting with feedback, re-contextualizing and reassembling this within an interpretative framework*'.

We also welcome Yancey and Weiser's (1997; p. 11) conceptualization of learning within portfolios as '*developing in waves, with one wave of practice preparing the next wave of theorizing about that practice*' In this research our wave is a response to a particular gap in e-learning research—a need for '*stories or narratives that capture the diversity of how students use learning technologies in their formal studies and (for) attempts to elicit beliefs and intentions*' (Mayes, 2006; p. 4). Given the dearth of evidence from dyslexic HE student authors themselves, we considered it vitally important to engage dyslexic learners in releasing such stories.

## Methodology

A qualitative, ethnographic methodology was selected and two academics invited two dyslexic students to form a small research group. The latter were

selected on the basis of their articulacy about the impact of e-portfolio-based learning upon them and were asked to assist in opening up/illuminating the research territory (Glaser & Strauss, 1968) rather than representing dyslexic learners in general. The teachers were familiar with the complexity of involving students as researchers and writers rather than as researched subjects (Herrington & Joseph, 2001; Hughes & Purnell, 2008) and hence issues of identity and power were acknowledged from the outset. Yet for all members, the significance of knowledge-making by those inside dyslexic experience with those outside was self-evident.

The primary construction of retrospective narratives by all members of the group allowed our diversity to become visible: Julie, a teacher educator, was interested in how technologies might support student transitions in becoming and belonging, both to HE and to wider workplace communities; Margaret, an experienced post 16 educator, manager and researcher, was interested in exploring dyslexic learner narratives as a means of informing Inclusive Curricula; Tess, dyslexic, who entered HE for the first time at 37 years of age, was now a practising therapist and teacher educator in Holistic Therapies; and Amy, also dyslexic and a Classroom Support Assistant in Further Education had just completed her Foundation Degree in Special Needs and Inclusion. Both Tess and Amy were passionately concerned to unravel the significance of their own experience. In epistemological terms, we all determined that a 'critical reflexivity' should lie at the heart of the work; an acknowledgement that our interpretations of evidence were shaped by our individual histories, perspectives and values.

Our specific approach was to construct and analyse retrospective narratives around the work of Julie as tutor and Tess and Amy as students on two quite different courses. (These courses had involved 15 and 30 students, respectively, who together with the tutors formed learning communities). A staged method was used: actively constructing our research methods from the tools at hand (Kinchelo & Berry, 2004):

- Preliminary investigative work by Herrington and Hughes alone: gathering relevant course data and literature;
- Interview by the dyslexia specialist of the e-portfolio tutor, about the nature of the e-portfolio work she had introduced. Preliminary decision about the organization of the research.
- Invitations issued to two dyslexic students. The overall ethos and plan were established and agreed by all. The students were both then interviewed twice (two 1-hour interviews) in order to re-construct their narratives. Prior blogging evidence in course work was used 'to guide recall or organizing thinking' and thus we used a form of *interview plus* (Creanor, Trinder, Gowan, Howells, 2006; Mayes, 2006). The interviews were then transcribed by Herrington to form narratives.
- The four authors then created a joint, retrospective, analytical narrative about the learners' experience and how this fitted with existing knowledge in these fields. This was a complex, collaborative stage with issues of power, inequalities and identities ever present. In this case Margaret and Julie created a 're-storying' narrative from the individual stories, which was then reviewed and amended twice by Tess and Amy at separate meetings with Julie. The tutors then wrote up the discussion and theorized further about the findings.

This approach can be seen as methodologically complex with a switching of roles of researcher and researched at different stages. It nevertheless created a powerful framework for bringing together knowledge histories of different kinds and a multi-layered agency for addressing our questions. It went far beyond both the simple autobiographical narratives and reports about the research by the researchers. The voices of all members can be heard within the final research narrative, dialogically engaged in making meaning.

## Findings

The student data offered some support for our initial hypotheses. Starting with student accounts of their reactions to the introduction of e-portfolio, it was clear that, for them, this system afforded easy, quick, enjoyable successful learning:

*well I'd got no skills in computers so when they said portfolios were going to be done on line and not on paperwork, and I'd only done them on paperwork, it was panic, absolute panic ...I got it, immediately... In fact I ended up showing nearly everybody in the class what I had been shown... it just seemed easy.... T*

*Not bottom of class this time, feel more empowerment. A*

After years of struggling, this felt 'joyful', 'pleasurable' and almost 'magical'. By offering an opportunity to learn quickly, e-portfolio offered a chance of reframing their old identity of failure from the outset.

For Tess and Amy, six elements had contributed to this effect. All of these enhanced learner power in relation to the curriculum and to relationships between teaching and learning roles. All minimized the impact of dyslexic weaknesses and employed their strengths.

1. The tutors' explicit acceptance and valuation of the learners and their starting points.

The students noted the clear signal from the tutor that they were respected and welcomed and that their various starting points were understood. Given their past experience, this early sense of connection with a tutor who cared what happened (Palfreman-Kay, 2001) was vital:

*I'd done three, three and a half years at X college before...one of the girls said she was going to university and I said ... I'm going to go to university... My tutor walked over to me and she said, you'll fail in university. She said, you'll be no good at it... I've seen how you write ... You are alright when you talk but yours is rubbish work. T*

They were invited to take responsibility for starting their own learning journeys and narratives:

*to...say what your feelings were, whether you were afraid... what sort of things you are going to get from university. A*

*we started off designing our own web portfolio... And I could use my own imagination on it then..., I didn't have to follow everybody else... they admired difference and I love difference. T*

They were allowed to use their own language from the start 'not university lingo'. A (no corrections but a spell checker was available).

## 2. Learner control over personal accessibility and the design of the visual space.

This emphasis on learner responsibility continued. The e-portfolio learning environment offered an enhanced palate for customizing the visual context in order to read and learn:

*the fact that you could change everything the way you wanted it. You could change the backdrop... You could put it into nice colours that wouldn't jump out at you....you can change the picture on the log on- A*

*I have learned new ways to lay out work, which has made it much easier for me. Having struggled for years as a dyslexic student, I feel the Pebble-pad has aloud (allowed) me to be at the same level as everyone else and in some cases ahead of them. I'm sure you can imagine what this does to my confidence and self-esteem. T*

*when you initially set up... you can ...categorise all your pages... The first page was my introduction and then ...my theory...so I could actually see in my mind's eye that I'd covered every base and they were all tabs down the side. A*

This visual and organizational control placed Tess and Amy in a position in which they could sometimes help other students; a role shift which impacted upon sense of identity.

The use of the system also offered the chance for learners to see the whole of their work visually, all together, in front of them whenever they wanted it:

*The whole lot....my storybook there. T*

*My pocket book-there all the time-full of assets- you know where things are...if you've got a spare five minutes, it's always there-can just log on. A*

Though the assets were always changing, reflecting an ongoing and fluid learning journey, they were offered a sense of control over the whole. It was a visual, organisational and retrieval aid as well as an aid to auditory memory, all of which are particularly important for dyslexic learners:

*If you can't always remember a conversation in the classroom...going back and revisiting it gives me a second chance- cos I've probably misinterpreted/misheard the first time T*

## 3. Change in the nature and quantity of the reading and writing burden.

Dyslexic learners often struggle with the sheer quantity of reading and writing required in parts of HE. The use of the system offered the chance to access small chunks of text at a time and to read almost exclusively on screen:

*I can read it better...on the screen... cos I still have a green sheet over my writing anyway... I could design my picture on the pad to be a pale green background or a pale blue. I could design it in white writing... I knew exactly what was there, it wasn't going to disappear, it wasn't going to jump into the next line. It was easier for me visually to see. T*

*I just felt more comfortable on the screen because I knew that I wouldn't have to go through everything to get to where I wanted because if I've looked at something I can usually memorise where it is on a computer. A*

With regard to writing, e-portfolio-based learning allowed both a structured way into writing and a freedom to write from the inside. Writing was thus experienced as talking into a structured space:

*it's actually all there for you. It's a structure...it's like you go to one page and it says what do you want to do with this. You type in like your hopes for the future, then that's done and you go to the next page...A*

It offered them a freedom to write as they wanted- to categorize, cut and paste, move between screens and insert visuals:

*Writing on screen has always been a lot easier for me because... of cut and paste... I had Word up and also had up e-portfolio...so that if I had done something wrong I would cut it, paste it onto the Word document read through my e-portfolio stuff and think...Oh that actually goes there... A*

For Amy this categorisation and tabbing also fitted well with her use of mind-mapping:

*what I'd usually do when I start an assignment is to do a massive mind map... So I have my mind map notes in front of me with...all the links coming off which then formulate my tabs for me ...and ...the branches coming off formulate inside of the tabs A*

#### 4. The chance to actively shape a safe, dialogic learning community.

The community was perceived as un-judgemental, a safe space, free from ridicule and criticism and in which learning from mistakes could occur:

*You haven't got somebody saying you are doing something wrong all the time. If you are pressing the wrong button, there is a delete button...I learn by mistakes...I'd rather learn by my own mistake and fix it myself than someone say you've done it wrong. T*

In addition to the psychological release this afforded, both felt that this allowed a richer personal, intrapersonal and interpersonal development than would be available in a traditional classroom. Tess mentioned using her e-portfolio to talk to herself and record and amend the conversations. New identities emerged as she 'introspected' herself:

*I love reflective practice and it gave me the chance to talk to it...It (Pebblepad) became a communicator with me and I'd start writing on it for my journals and then if something had changed...I could add to it T*

The mix of classroom meetings and e-portfolio-based learning also allowed new kinds of relationship with fellow learners, involving both an extended social, intellectual and therapeutic reach within the group and also control over who would be allowed access. Both felt that they were in contact with more members of the group:

*You would start talking to people you didn't necessarily speak to in a class situation, because they would sit away from you A.*

Tess also described using the classroom to decide with whom she would later interact most in the electronic space. Selection and control over readership was essential:

*because I'm writing something deep about myself. T.*

*I gained physical, visual trust in the classroom with these people... we'd have the Thursday afternoon lessons.... I know who I am going to interact with mentally, who physically, who emotionally ...and then I know ... if there was something I wanted to talk about on the night when I got home... that targeted me my audience... on getting to a level of deep thought...T*

*For our first assignment we had to do a group presentation... So at that point we were developing like a close network of friends.... We would... actually send the work to each other, the presentations to each other... A*

Within the space itself, both noted their power to influence the topics to be aired and so viewed themselves as active shapers of the space. But for them it was also a chance to see the work of others through their blogs and e-portfolios. Tess felt that blogging was important because, 'there is so much inside people that never gets a chance to come out', while Amy noted that using e-portfolios:

*made group work very transparent and so group assignments were easier to 'see'. ... you can ...just keep a running log of what happened. ...you can see who's done what ...so nobody's really getting away with doing nothing*

The individual and group blogging allowed writing to be seen as talking and listening and then in class, physically, these written conversations would be noticed and discussed...*did you see what x has written...*and then all would go and check this out. It created a powerful interaction of electronic and physical talking and listening. Tess noted that the opportunity for these extended conversations allowed a depth of learning:

*I would never have learned that in a classroom...and I'd never have learned it from just talking to somebody... T*

The immediacy of this support from others on line was particularly important to Amy, even when it merely consisted of someone else saying that they were struggling too, rather than actual help.

##### 5. Explicit combination of intellectual, emotional and social development in a fluid academic space.

Both Amy and Tess described e-portfolio-based learning as offering a holistic overlap between intellectual, emotional and social expression, which coincided with their natural way of thinking and learning. They contrasted this sharply with what they experienced as the separate, depersonalized and often narrowly defined intellectual focus in other courses. They felt they could both explore and become fully themselves as learners, living a kind of fluidity between and within the cognitive and affective, within different dimensions of time, and between the members of the community.

## 6. Congruence of student and tutor values about learning.

Both Tess and Amy experienced this here for the first time and valued it highly. They identified the extent of the congruence by highlighting key tutor characteristics: s/he had to be trustworthy, creatively extending interpersonal interactions, responsive to different levels of IT expertise within the group, open minded and prepared to think outside the box. Such a person had to be dedicated, provide fast effective feedback and having an ability to discuss and to read between the lines. The interaction with the processes and values of the tutor produced a depth of personalized learning:

*Tutors were very interested in our feelings whereas other... lecturers weren't and this whole blogging came into that where you were very instant with your feedback whereas we don't always get that. A*

Both valued the initial emphasis on metacognition and the emphasis on learning as doing something enjoyable and active as opposed to sitting and listening to lectures.

This evidence suggested that both the form of the e-portfolio system and the pedagogic stance of the tutor were necessary for deeper thinking and learning outcomes. The debt, for example, to liberatory pedagogy is marked (Freire, 1972). The result for Tess was the creation of new identities in relation to the past, a breaking of links with past constraints and now feeling whole. It was essential to rebuilding herself as a person, a learner, a thinker:

*...at school... I just didn't understand what they were on about so I got bored... when I came to university, I found that somebody has made me look into everything now and made me understand why all that happened so I was prepared to venture into my own learning adventure .... ..and then when we came to the portfolio... it is completion to me. Portfolio is never ending but it was like a completion to how I... learned. T*

For Amy it was her starting point in becoming more open to different ways of learning. She developed confidence when she got her first mark back and felt positive about what she perceived as a mature way of working and a growing feeling of belonging in the university environment. She was aware that the use of PebblePad alone was not responsible for it all but it had started her off and acted as a sustaining fuel:

*it's more about you as a person. I've learned so much about how I learn since I've been here which has really helped me in my job. That's so important. That is a lot deeper. That's ... something that will always be there, like a personal understanding isn't it A*

In effect, they could use it for their own needs and their yearnings for the present and future.

### Some Differences?

These e-portfolio learning practices clearly offered a student-centredness in terms of facilitating transition, reframing past identities and creating new ones. It offered help with many of the weaknesses often associated with dyslexia: aspects

of reading, writing, spelling, short-term memory, organization and structure. It offered an opportunity to learn more about what are often described as dyslexic strengths: visual spatial and global thinking skills; creativity; the ongoing, compositional connections between parts of the work; problem solving; learning through talking and discussion; and multi sensory and kinaesthetic learning.

But did this work in quite the same way for Amy and Tess? There were commonalities but some differences. Amy's needs appeared to be more instrumental: linguistic structures and social connections to assist with her course. Tess urgently required a holistic exploration of herself as reader, writer and thinker within the 'bendiness' of the space. This may have stemmed from their ages, with the younger learner focused on becoming au fait with the practical business of writing while the mature learner prospected deeply into her identity and into the identities of fellow learners. This suggests a necessary sophistication in the emerging theory and an avoidance of thinking that e-portfolio-based learning will be experienced similarly by all dyslexic learners (cf. non dyslexic learners).

Tess also was more actively engaged in getting the group to respond to her. She frequently referred to offering bits of material and to viewing the ensuing responses as a contextualizing landscape from which she could begin to build her own work. It is not uncommon for dyslexic learners to require a landscape of word-based knowledge as a precursor for their own thinking when dealing with a new issue (Herrington, 2001). Tess could not only extend her intellectual reach with fellow learners, she found the written interchanges an 'incredibly efficient' way of learning. In contrast, Amy created her frameworks for thinking using paper-based mind maps (software was experienced as too slow) and her contacts with fellow learners were more connected with practical and social support. However, she did comment on the value of working with more experienced fellow students.

It was clear from this evidence that both Tess and Amy regarded e-portfolio-based learning as necessary, desirable and sufficient but sometimes for different reasons.

### Some Difficulties

Notwithstanding the abundance of riches noted here, Amy did note that technology sometimes broke down and Tess reported one system difficulty, namely that she could not always find time to read all the responses from fellow students:

*I ... check the blog and then there'll be a little bell to say that somebody's written ... but then you can have twenty people comment.... And you think, I've only got five minutes... now which one do I read? So I'd look at the ... ones with a deeper meaning and then when I'd got time, I'd... read the whole lot. T*

They also noted that a proportion of group members (up to 40%) did not find the system features equally helpful. For some older students, lack of prior IT experience was an obstacle, in contrast to younger students who had been working with computers since primary school. Others were not prepared to spend time on writing if it was not to be marked and not all writing in the space was. Some did not appear to like it because, 'they don't want learning to be about exploring themselves' T. They wanted to keep some boundaries in place. Tess and

Amy were thus aware that not all fellow learners deemed e-portfolio learning to be either desirable or necessary.

Their main concern however was that of transition from this e-portfolio practice to e-tutors who were less skilled pedagogically or who did not make the e-portfolio-based learning central to the course. In such circumstances, fellow students were less interested in coming into the space, less happened there and instant responses between students were impossible. The transfer to non-e-portfolio programmes was even more difficult:

*I found it very hard ... to go from one experience of being very supported to another experience of being told do this, get on with it. A*

This suggests that the symbiosis between the use of an e-portfolio system and pedagogy in this case was both a strength and a source of vulnerability. It has clear implications for transferability and for staff training.

## DISCUSSION

The implications of this small piece of research can be considered from a number of perspectives. Regarding the personalization of learning, distinctive dualities emerged. There is often an expectation that somehow personalization is individually customized and independent. Yet these narratives revealed both dependence on tutor and peers and interdependence in the dynamic of personalizing learning. E-portfolio-based learning offered a means of constructing this interdependence. Within it there was an extremely close and often complex relationship between the personal and the interpersonal space as learners sought to personalize both. Tess described her e-portfolio as her 'secret garden' and yet needed the listening responsiveness of others. Similarly there was a complex duality operating regarding physical and electronic realities as learners were alert to the significance of the former (classroom dynamic) for their use of the latter and yet at times seemed to see electronic space as more real, tangible and almost physical.

So close did the personal fit feel that both students did not remember the staging and timing of e-portfolio activities accurately. Retrospectively they described the 'easy' fit rather than the build up. This has implications for timing the evaluation of this kind of work and for explicit discussion with students about when to introduce it in the academic cycle.

Further, though it ostensibly created one electronic space, the use of e-portfolio also made visible the relationships between learning spaces as students were talking, listening and writing within electronic space, home space, university computer space, learning environment space and work space. There was a sense that using an e-portfolio system allowed a reconfiguring of writing time and also reified the complex personal journeys wrought through these spaces.

These profound experiences pushed aside the so called deficits which underlie medical models of dyslexia as disability and even to some extent social models (Tremain, 2005). Students' sense of their dyslexic identities developed dramatically as they began to understand their dyslexic strengths in this visual and rapidly changing electronic world. Dyslexia now was positive, enabling,

'colourful', 'amazing'. The use of e-portfolio-based learning was, in effect, a new part of the HE landscape which could *construct ability*.

This work can also be seen as involving a new set of writing practices within the situated literacies of HE (Street, 1984). They involve the mixing of different types of writing and seeing writing as different types of activity (Bazerman & Russell, 2003), both of which have an impact on the development of writer identity. In this case, learners had new linguistic possibilities in the new space and encouragement to use creativity, metaphor and multimedia. Learners were weaving their autobiographical selves with their discursive selves (Ivanic, 1998). They were painting themselves and making up the gallery. This work points up sharply how a change in practices—an acceptance of different literacy and visual practices as of equivalent value—empowers dyslexic learners.

With regard to the HE curriculum, we have already noted the significance of bringing talking, learning and writing more closely together for dyslexic learners. Bringing academic work into the conversational space was important for these dyslexic learners who needed to ask questions in order to learn and who did not readily experience boundaries between the personal, emotional and cognitive in the academic space.

In terms of e-portfolio research and practice, this evidence raised the issue of the appropriate nature and blend of face-to-face and online activity in the use of an e-portfolio system. Given that this is largely dependent upon context and practice, it is something which has to be discovered by tutors over time. If we are indeed witnessing and experiencing a new model of education Mayes & de Freitas' (2007; p. 13) through the use of internet-based tools such as e-portfolios, then this temporal, developmental experience has considerable training implications for both staff and students. Yet Laurillard (2007; p. 48) warns in her critique of the impact of recent policy and funding that

*we (teachers) scarcely have the infrastructure, the training, the habits or the access to the new technology, to be optimising its use just yet.*

So the transferability of this approach will depend on the pedagogic awareness of the tutor, their habits and level of practical experience as well as their confidence in taking risks.

As alluded to earlier, there may be tension in the multiple roles of 'dialoguer, teacher, and assessor' (Barrett & Carney, 2005). However, this study suggests that the adoption of a model of integrative learning (Yancey, 1998), allows for exploration of the delivered, experienced and lived curricula. The implications for e-portfolio-based learning and learning research within these landscapes in flux are exciting as spaces are opened up for '*the reflexive practitioner to see experiences... as open to contradictory and conflicting interpretations... which can nevertheless disrupt habitual and mechanistic ways of being*' (Brown & Jones, 2001; p. 6).

## Concluding Points

The significance of this research lies first in the production of hard-to-reach new knowledge from dyslexic learners regarding a major curriculum innovation. The learners revealed why this form of e-portfolio-based learning represented a vitally important curriculum process and 'personal fit' for them. The general

argument here supports the view of e-portfolio work as a 'Trojan mouse' within the curriculum (Sharpe & Oliver, 2007; p. 49), bringing new possibilities with regard to tangential thinking styles, interactive learning about learning, using forms of writing which are close to 'conversation', and enabling learners to 'curate' their writing (collating and re-collating for different purposes and different audiences). The new configurations of academic and literacy practices carried unique pedagogical potential for these dyslexic learners and offered some support for prioritizing e-portfolio practices within inclusive curricula.

But clearly it does depend on how it is done. Notwithstanding some differences in their individual e-portfolio learning practices, the learners as co-authors could delineate and agree upon some of the key features contributing to their success. The particular personal, educational and political values and practices of the tutors were of central importance and though the approach described here is not the only way to proceed, it did produce important outcomes. Future research could usefully explore tutor values and attitudes further if we are to avoid a reductive 'tips for e-tutors' discourse. There are deeper shared journeys by learners and tutors to be excavated here and HE institutions could continue to encourage these as part of 'everyday' practice. More research is also needed with dyslexic learners to release individual narratives which will refine these stories and 'ground' the emerging theory. Further, given the observation that e-portfolio was not deemed desirable or necessary by all non dyslexic learners, more comparative exploration is required if we are to draw more precise conclusions about the winners and losers in a newly configured inclusive practice.

Finally, the methodology—the shaping of a student/tutor research and writing group to generate new knowledge—represents an important invitation in terms of dialogic and power sharing research processes with dyslexic learners. Though complex in its execution, it offered a dynamic mechanism for releasing more and more narrative material as we proceeded and as collective trust developed. It may appear that it is a method only suited to very experienced researchers with a strong reflexive sensibility but our experience with academic staff who have devised ground breaking pedagogy with their dyslexic students would suggest that this research in practice method could have a wide appeal.

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