

FROM “WOW!!!” TO “WOW” IN THE SPELLING OF “HARD WORDS”: FROM INSTRUMENTALISM TO TRANSFORMATIVE LEARNING ENHANCED BY ICT

Tim Shortis, Graduate School of Education, University of Bristol
Dan Sutch, St Michael’s CE VC Primary School, Bristol

ABSTRACT

This is an account of work in progress in the English Subject Design Initiative¹ of the InterActive Education Project². It is the story of one recently qualified teacher’s participation in the project and of how his integration of ICT into his teaching and learning practice developed from an implementation model towards more enlightened exploration. It is a case study account focused on the teaching of the spelling of “hard words”³ to Year 6 pupils and it considers the problematic pedagogical issues that occur when ICT is "harnessed" to enhance learning in a directed curriculum model. Recently teachers’ roles have become more overtly circumscribed and models of professional autonomy have given way to a role of pedagogy as implementation of directed expert curriculum content. Questions are raised as to whether and how the effective use of ICT to enhance learning is constrained by the folk pedagogies underpinning this “delivery” model (Bruner 1996).

INTRODUCTION

This paper focuses on the shift in pedagogy of one recently qualified teacher who has worked as a Teacher Researcher⁴ on the InterActive Education project. Using an outline account of the collaboration validated by the teacher and excerpts from interviews both before and after the intervention, it shows how the teacher’s successful use of ICT to enhance learning about morphology, etymology and orthography was provoked and augmented by a dialogue with university research support which led to a more probing response to the directed curriculum as it relates to literacy and the spelling of difficult words. The dialogue opened up the notion of ICT as a means of, and channel for, giving the curriculum added interest (the “wow” factor) or efficacy, to a more problematic understanding of the literacy curriculum than that made available by the given material

¹ Design Initiative is the term used for collaboration between Teacher Researchers and University Researchers in an intervention design to enhance learning through the integration of information and communications technology (ict). For further details see www.interactiveeducation.ac.uk

² The project InterActive Education: Teaching and Learning in the Information Age is part of the Teaching and Learning Research Programme, funded by the ESRC

³ “hard words” was the phrase used in some early dictionaries to refer to words difficult to spell. These were often polysyllabic loan words and compounds (Crystal 1997; Green, J. 1996).

⁴ Teacher Researcher refers to a school-based teacher working on the project and with Visiting Fellow rights at the university. University Researcher refers to a university based researcher with recent classroom experience.

and by the notion of ICT as “adding interest”. The particular software used, WordRoot⁵, functioned both as a tutor and a tool for learning about abstract concepts seen as “hard”. Its multi-sensory re-representation of the links between morphology and etymology in the spelling of “hard words” provided a site for student enquiry that went beyond that which was offered by the directed curriculum. The teacher and student interaction with the software and their re-working of its content calls into question the “delivery” model, itself in turn, nested in meagre representations of the model of the learner and the “speller”. The interplay between the dialogue and the application re-framed the directed curriculum and gave a context for the teacher and the students to re-negotiate their prescribed roles.

A secondary sub-argument of the paper is that the approach to language in the NLS approach to spelling is form focused as distinct from function and meanings focused. As such it foregrounds formal patterns in language but gives much less attention to cultural knowledge. This restricts available understanding of spelling and it was this restriction that was opened up by this Design Initiative.

STRUCTURE OF THE PAPER

The paper starts with an outline of the context for the formation of teachers including their formation as English and Literacy teachers. It outlines the spelling debate and goes on to position the directed curriculum in the light of Bruner’s taxonomy for models of learning. Then it turns to the case study of DS giving an outline of his Design Initiative. Finally there is overview of the interview data and an outline of some of the ways in which this shows a shift in pedagogy over the past twelve months.

CONTEXT

Since the end of the 1980s, approaches to initial teacher training (ITT), professional development (PD) and the teaching of politically termed "basics" such as literacy in England have all become more circumscribed, prescriptive and centrally directed (Dale 1994; Furlong 2001). At the same time, the new site of ICT- enhanced learning has taken on centrally arranged policies and practices with guidance more frequent from BECTa than from LEAs. In classrooms and in schools of education, there is increased emphasis on directed curriculum content, strong classroom management techniques and a results culture (McCullough 2001, Campbell 2001). These changes have intensified and redirected teachers’ labour and notions of professional expertise. In extreme, the recently qualified teacher's role has become one of compliance and instrumentality and so is less concerned with joining a community of practice exercising autonomy on the basis of expertise in subject knowledge and pedagogic judgement. This has given rise to such expressions as the "teacher proof" curriculum, which taken to logical extreme

⁵ Wordroot: Hidden Meanings in the heart of language CD-ROM see www.wordroot.co.uk

appears to imply a Shannon and Weaver (1949) sender-receiver communication model in which the teacher represents the noise blockage or facilitation in the conduit of communication to enlightenment from state to learner: it is an extreme which gives a new twist to the term “state school”.

In relation to this, in the case of teaching and learning about literacy, and especially teaching and learning about spelling, the situation is made more complex by the formation of “English Teachers” which for historical reasons outlined by Dixon (1991) has tended to privilege knowledge and understanding about literature over knowledge and understanding of semiotics, language and literacy.

Since the 1970s there have been several major initiatives to improve the informed basis of teaching and learning about language among teachers including the Language Awareness project in the 1970s; the Language Across the Curriculum initiatives that followed the Bullock Report (1975), the Language in the National Curriculum project that followed the Kingman Inquiry (1997) and Cox Report, and finally and most prescriptively the Literacy Strategy. The Literacy Strategy stands out for its approach to language. Whereas the LINC approach was much influenced by functional theories of language and always placed meaning at the very centre of language study, the Literacy Strategy places more emphasis on knowledge of formal properties and works back to meaning (Carter 1991; Halliday 1978).

Historically teachers’ primary focus in the teaching of spelling of hard words has been based on performance competencies and prescriptive attitudes to language. The goal has been to ensure that children spell words “correctly” rather than to ensure they understand the linguistic and cultural basis of English spelling (Crystal, D.1997). The focus has been on the instruction of children for the replication of accuracy: the enforcement of correct spelling, rather than the teaching about the nature of spelling, its causality and its social dimension: (“why accurate spelling matters”). Typically practice has developed around the learning of spelling lists, the correction of errors, and instruction in a heritage selection of spelling rules and their exceptions⁶. These strategies have made no great space for acknowledging the degree of spelling complexity in English or the reasons for that complexity.

In the particular case of the awareness of the background to English spelling and its problems, the knowledge base available rests on a fragile research edifice: English spellings show less regular simple sound- spelling correspondences than many other languages but the underlying reasons for this sense of system are not well understood. As David Crystal has written in appreciation of Edwards Carney’s contribution to this

⁶ e.g. “I before e except after C”. Although recently Bryant, Nunes and Snaith (2000) have shown that other equally consistent orthographic rules are not generally taught.

research, "no area of modern English has been in such persistent need of clarification from linguistics as spelling, and yet no area has been so persistently neglected".

The introduction to the Literacy Strategy handbook for Key Stage 3 approvingly quotes David Crystal (1997:273): "Children are made to learn spellings by heart, and are rigorously tested on them, but few attempts are made to explain what it is they have learned. They are not told why spellings are as they are, or about how these spellings relate to the way words are pronounced. Without such a perspective spelling becomes a vast, boring and time consuming memory task."

The suggestion made in this paper is that the NLS approach to spelling plays up formal sound spelling correspondences, "how these spellings relate to the way words are pronounced" but plays down "why these spellings are as they are" as this relates to the study of etymology and cultural background. In so doing it privileges a model derived from cognitive psychology and psycholinguistics at the expense of neglecting the force of sociocultural determiners of standard spelling forms and attitudes towards spelling.

RESEARCH ABOUT ENGLISH SPELLING

The review of the literature of the research debate on spelling is a topic for a separate paper in progress. Here it is enough to say that there are three broad positions: the common practitioner perspective outlined by Crystal, in which spelling is turned into a memory game and where linguistic considerations are extraneous; the approach that English Spelling is linguistically systematic and regular and the historical and perspective that English spelling has emerged out of the happenstance of who is in power and is difficult to learn because it is so lacking in system. These positions all have research-based grounding and popular airings.

There is a widespread and longstanding view that English spelling is highly irregular and difficult to learn and this view, in extremis, is associated with the spelling reform movement. This leads to the notion that English spelling has only 50% simple regularity. There is some research substance to this: Carney cites Hanna (Hanna et al 1966) and the development of an algorithm that showed such a correspondence. More recently Gunther Kress has brought attention to this lack of system in loan words and the difficulties it causes (Kress 2000).

"the irregularity of loan words poses fundamental questions for a child as much as for a theory of spelling. They entirely undermine the regularities -such as they are of the sound system of language and therefore undermine the regularities such as they may be – of the relationship between sequences of sounds and sequences of letters."

There is also a view that the spelling of English language is regular and again this has popular and research based manifestations. Carney cites “the extreme statement of this point of view” in “the provocative declaration of Noam Chomsky and Morris Halle that: ‘English orthography turns out to be rather close to an optimal system for spelling English.’“

It is Carney who has made the major contribution to this research base. In his monumental technologisation of spelling research he has taken an exhaustive, corpus-based, “functional” approach which seeks to understand how the spelling system works in the context of its linguistic “ecosystem” (my words) as opposed to the traditional academic philological question about “how did these spellings come about”. Using a detailed knowledge of English phonology and referencing words to their Oxford English Dictionary etymologies, he provides an exacting account of the statistical degree of sound spelling correspondences and the phonological reasons underpinning many apparent irregularities. In particular his work shows how words from other languages are assimilated into English at the phonological and orthographic levels.

“The divergence found in English spelling is often overstated. This is largely because people fail to realize that some spellings are conditioned variants which do not in effect compete with each other” (Carney 1993:3).

Carney also argues for a much more systematic basis for spelling on a philological historical account of spelling. Citing Brengleman, he suggests that the role of printer’s style sheets was secondary to and determined by the deliberate and exacting synthesis made by a generation of scholars.

“The English spelling system that emerged [in the seventeenth century] is not a collection of random choices from the ungoverned mass of alternatives that were available at the beginning of the century, but rather a highly ordered system taking into account phonology, morphology and etymology and providing rules for spelling the new words that were flooding into the English lexicon” (Bregelman 1980:334 cited in Carney 1993:467).

Carney, or a simplified version of Carney, appears to be very influential in NLS thinking and in its foregrounding of phonics and text string approaches to spelling. It is interesting that the NLS literature (Beard, R. 1999) groups phonics and spelling together and cites Carney in its review of the English writing system. At the popular level and in some practitioner literature about phonics, this leads to a simplified understanding of the claim that there are only 500 really unsystematic spellings in the English language and, by implication, a correspondingly simple notion that English spelling is regular and uncomplicated if only the structures and rules are known.

The National Literacy Strategy as it was mediated to the teacher in this case study came to be understood as a model for understanding most spellings through phoneme and

grapheme correspondence with words not dealt with by that model being considered as exceptions. The work on etymology was limited to a week a year and was not hooked across to its implications for spelling. Similarly, work on morphology tended to look at prefixes and suffixes and word stems and not at the interplay between morphology, etymology and loan words.

FOLK PEDAGOGY AND THE DIRECTED CURRICULUM

The directed curriculum has the advantage of allowing “teacher proof” standardisation and commonality of student entitlement but may carry its own problems in the model of learning implied. Bruner has suggested that teaching is always based on and reflects assumptions about the learner which in turn limit both what can be taught and the kind of learning that can be conceptualised (Bruner 1996: 60).

“Any choice of pedagogical practice implies a conception of the learner and may, in time, be adopted by him or her as the appropriate way of thinking about the learning process. For a choice of pedagogy inevitably communicates a conception of the learning process and the learner. Pedagogy is never innocent. It is a medium that carries its own message (Bruner 1996:63).

Bruner continues, “A vision of children” as, for example, “needing skills only to be developed through practice” or “as empty vessels to be filled with knowledge that only adults can provide” needs to be de-constructed if the “implications are to be appreciated ...as their impact on teaching will be enormous.” He develops the taxonomy of models of mind and models of psychology and this can be summarised as follows:

Type 1: seeing children as “imitative learners engaged in the acquisition of “Know-how;”

Type 2: the acquisition of propositional knowledge through “didactic exposure;”

Type 3: “ children as thinkers: the development of intersubjective interchange;”

Type 4: “ the child/learner as knowledgeable” and able to manage “knowledge beliefs” by testing these against evidence” (Bruner 1996: 53-63).

Bruner’s chapter focuses on “children” but such a theory could encompass adult learners including those learning to be teachers. The development of detailed, prescribed curriculum content may carry with it an implication of a self-limiting model about teachers as learners. The resulting mental models relate to both pedagogy and subject expertise: teachers learning how to exercise their pedagogic judgement and, in the context of limited systematic knowledge about language among teachers of English, their learning about language itself. It also has a bearing on the conception of the end-audience of the child as learner. If the child is to learn in a grid of content over time, what space is there for the co-construction of knowledge beyond the scope of the pre-

determined learning objective? Further to this, the literacy strategy for Key Stage 2 spelling and the national Curriculum requirements for ICT take a skills and competencies model that limits considerations of cultural context and in so doing constrains the kinds of understanding available to models 1 and 2 of Bruner's taxonomy.

DATA COLLECTION AND METHODOLOGY IN THE INTERACTIVE PROJECT AND IN THIS CASE STUDY

The InterActive project data collection is wide ranging and complex and aims to provide units of analysis at the levels that start with the teacher, student, class and subject design and work through the school and LEA to national and supranational policy. The data collected for the work with DS includes recordings of interviews with students and teachers and document records of class work, and design experiment development done by the school and university based Subject Design Teams. For the purposes of this paper we have worked with the baseline interview with DS in October 2001, an August 2002 interview and written statement, and on records of the lessons seen. The focus is on the snapshot of ways of talking about practice that relate to the shift in pedagogy.

THE STORY OF THE DESIGN EXPERIMENT INTERVENTION IN DS' TEACHING

DS is a primary teacher in the second year of his professional practice and had followed the new school-centred model of Initial Teacher Training course in 1999/2000, the year of the introduction of the Literacy Strategy. Prior to this he studied a degree in history. DS's first post is at a school set in the suburban housing estates of northwest of the city. It is a large new successful primary school with nearly 600 pupils and a young staff age profile. It has "beacon school" recognition and enjoys an outstanding local and national reputation for its phonics-based teaching. There has been a consistent pattern of very high scores in SATs and tests of reading age since the phonics approach was introduced in 1997 (Wainwright, T. 1999).

Prior to developing the main intervention, DS came into the university for four subject design planning days in which ideas were shared, demonstrated and discussed with a group of Teacher Researcher and University Researcher colleagues. As a follow up to this he conducted a small-scale design experiment. He later described this pilot project as follows:

My initial pilot project was to look at how using a simple word processing package could affect the student's spelling ability/attainment. There had been demonstrations by the InterActive team of how to use PowerPoint to teach poetry, yet to my mind, this involved teaching PowerPoint first. (In fact I used the medium of poetry to teach PowerPoint during my ICT time later that term).

I set two tasks that were to be used to assess any change in the student's spelling ability through the use of ICT. The first task was given to two of the class, to write an article on a subject of their choice (golf). This I compared to the work that they produced in their Literacy books, enabling me to view any changes in their spelling attainment.

The second task was given to a different child each week. They simply wrote their weekly spellings on the computer (without a spellchecker) whilst the remainder of the class used the normal pen and paper. Their marks were then compared to their other weekly test results.

Looking at this, we can see an instrumental focus on improving spelling “ability” and “attainment”, though that ability is not separated out from performance as distinct from knowledge and understanding. This relates to a notion of accuracy as not producing errors. Accuracy may also be affected by the kinds of words attempted. There is a relatively simple and crude measure of comparison between assignments written by hand and those word processed. We can also see a more complex mediation and exercise of professional judgement in the pragmatic filtering and then re-configuring of an activity seen during the development workshop session at the university.

The results, although far from conclusive, showed an improvement in the spelling abilities of the children of lower and average ability, yet saw a decline in the attainment of the stronger spellers. This showed, to my mind, that with further research and assessment, a tangible link between improving spelling ability and ICT could be found.

More importantly there is a shift towards a more engaged model of thinking about literacy. DS acknowledges the limitations of this small piece of action research but in the process of carrying it out he is starting to engage with a Teacher Researcher learning model that is beyond instrumentality in the transmission of the directed curriculum. It was at this point he began using the university library to read the educational literature relating to spelling.

With interest renewed - both from a personal point of view in terms of professional and personal development and in terms of developing methods of helping my students, I began to research around the topic of teaching spelling and began developing ICT based tasks for teaching and learning spellings. This interest extended with encouragement from the InterActive team and through the ability to use the University resources in my position as Visiting Fellow.

OBSERVATIONS OF LITERACY HOUR SPELLING LESSONS SEEN BEFORE THE MAIN INTERVENTION

Following the pilot subject design intervention, a number of visits were arranged to familiarise the University Researchers with what went on in classes and in particular to

familiarise them with the literacy teaching. These observations showed a pattern of Literacy Hour spelling lessons characterized by fast pace, clear information structure, good levels of engagement and student interactivity, and strong classroom management but all bedded on a thin grid of received knowledge about language. The level of planning was meticulous with a strong focus upon formal details of sound spelling correspondences in Standard English. There was much less space for voiced awareness of the cultural causes and consequences of the standardization of spelling or place for discussion, for example, of related language issues such as, for example, non-standard English.⁷ The curriculum basis was primarily knowledge of English spelling with a focus on phonics-based decoding competence.

As a teacher/University Researcher I perceived a highly developed model for identifying and acquiring the formal properties of letter string and phoneme correspondence but one that had no corresponding space for the cultural dimensions of language. This was in marked contrast to the LINC focus on language in which, following from Halliday (1978) (Carter 1989) tend to start with meaning and function and work back to form. As an A Level language examiner, it was very salient that there was no discussion of English spelling as being difficult by comparison with many other languages nor ideas about how and why some spellings came to be irregular. This was in spite of some strong and sustained classroom practices in dictionary work (including etymology) and a strong commitment to literacy development generally.

DS has commented that this wasn't there because it wasn't in the programme of study or in the lesson plan and this in turn relates to the profile of language coverage afforded by the directed curriculum.

The general strategy to spelling could be described as an eclectic mix combining well orchestrated micro-tactics of look, cover, write, check, esoteric mnemonics, weekly tests and literacy strategy/phonics derived focuses on text string/phoneme correspondence or work on the exceptions. The skill of the orchestration was in the sense of pace, interactivity and multi-media presentation.

The approaches need to be seen in the context of the school, LEA and NLS published guidance on literacy lessons and the general phonics basis. These texts combine an emphasis on the formal aspects of language, as opposed to its functional or meaning making dimensions and exhort fast paced, varied instructional styles that hold and keep attention. This model is encapsulated in the bullet points of the training materials: "teaching is multi-sensory, not multi-strategy"; "Different learning styles need to be addressed in multi-sensory teaching and use of repetition and constant re-enforcement"; "Phonics is essential for all NLS levels: word, sentence and text". The underlying theory

⁷ The Bristolian accent still has a post-vocalic "r" which might be a site for a cultural explanation of the "rt" text string in port, cart which has fossilised the previous more widespread pronunciation of this now local feature.

of literacy here is what Brian Street has termed “autonomous literacy”, a model which privileges individual competencies whilst effacing the social, functional and meaning making aspects of language in its cultural contexts [Street, B. (1995)]. From the Brunerian perspective, the mental model of the learner is one based on competent replication. A single strategy (phonics) is delivered systematically through repetition, reinforcement and multi-sensory variety (South Gloucestershire Curriculum materials).

DEVELOPING THE DIALOGUE: SOUND /SPELLING CORRESPONDENCES AND “HARD WORDS”

During these visits a dialogue developed between the university and teacher research positions. In one conversation DS explained that he was aware that the school’s phonics model of spelling seemed to work very well at Key Stage 1 but could not be depended on exclusively for Key Stage 2 spelling. At this level pupils increasingly encountered a vocabulary in which there were differing ways of realizing the same sounds including some illogical spelling patterns that appeared beyond explanations other than mnemonics to remember them by (e.g. “big elephants can’t always use small exits = because”). At this level pupils would also be encountering more polysyllabic vocabulary with an origin in loan words: the kind of vocabulary known as ““hard words”” in the early dictionaries of the sixteenth and seventeenth century and frequently derived from the “inkhorn ” loans from Latin and Greek (Crystal, D. 1997).

Many such words are compounds that have their origin in the early modern English period from around 1550 to 1750 and were often borrowings from other languages and particularly Latin and Greek (Scragg, D.C. 1976, Crystal, D.1997 Green, J.1996). In some cases this vocabulary was imported to give English new synonyms with greater gravitas, and in others, new developments in science, technology and intellectual life created contexts for coinages and lexical innovation. The problem with “hard words” of this type is that they tend to have an orthography based on a representation of sound spelling correspondences found in the source language (so “ph” from Greek for phonemes more commonly rendered as “f” in English or similarly “psy” and “sigh” as homophones). Such sound spelling correspondences and their associated “legal” and “illegal” consonant and vowel clusters vary quite markedly between languages (Knowles G. 1986). So a simpler phonics spelling strategy of sounding out letters does not work so well in such cases. However this polysyllabic vocabulary is characterized by high levels of systematic regularity in the realisation of its complex morphology. In short, morphology and etymology rather than phonics offers a key to being able to realize such words.

Example: Are there ways in which “antidisestablishmentarianism” is easier to spell than “knight”?

“HARD WORDS”, SPELLING AND THE BOURDIEUAN SUITCASE OF CLASS ADVANTAGE

The cultural significance of the “hard words” lexicon has a social significance akin to a shibboleth. Loanwords and especially Latinate vocabulary form the basis of much of the prestigious, formal, intellectual vocabulary of English and the associated discourses of power in politics, law, medicine, and academic life. Furthermore the compound structure of these words yields an accumulating cultural capital of textual de-coding capacity: with morphemes indicating an etymon in loan source language, knowledge of some words allows knowledge of others written in the same opaque “loan code”. To all this can be added the usual social etiquette penalties for spelling a word incorrectly and therefore showing ignorance. At folk level the value of this store cupboard of morphological treasure is there in the “public” and grammar school and matriculation entry traditions of learning Latin the better to learn English.

This background is given much less extensive coverage in the literacy strategy which, as stated before, tends to work on the identification and investigation of formal properties in spelling bank clusters. Leaving aside the inaccuracies in one key stage 3 document a morpheme is described “as a collection of letters” and in another for Key Stage 2, “moth” is given as the morpheme in “mother”, the whole approach tends towards an ahistorical perspective which is salient in its reticence and which gives minimal coverage of philological and sociolinguistic accounts of language change and standardization (Milroy, D and Milroy, L. 1987, Leith, 1997).

CHOOSING THE ICT TOOL

There were a number of spelling applications in the school all of which took the letter string pattern approach to spelling (e.g. Word Shark). Teachers commented favourably on these and DS certainly used the list provided in the Word Shark software guidance to inform his Literacy Strategy work. There seemed less evidence of their being used in the school which may relate to the absence of a computer room until December 2001.

The ICT tool chosen to enhance learning about “hard words” was WordRoot which University Researchers had encountered before as a guide to learning about basic morphology and etymology. This well reviewed but technologically unsophisticated software gives a hypertext account of morphology and etymology in a collection of 100 words, nearly all of them with derivations from Latin and Greek. It cross-references these to a further 300 words that students can investigate outside the application. Words can be manipulated and sorted at the level of morphemes and etyma and re-combined with other words, which share a constituent morpheme. The application is multi-sensory with voice clips explaining the meaning of the word, saying the word and a graphic clip demonstrating the meaning. It has the properties of an immersive environment allowing constrained exploration. A large number of related words can be explored quickly in a

way that is constantly reinforcing the model of polysyllabic compound words being made up of Lego-like blocks of morphemes as opposed to phonemes, letter strings and syllables.

Although far from sophisticated in its multimedia presentation or in its scale of development, WordRoot also provides a multi-media stimulus to be used in talking about language issues at the level of curiosity and social interest rather than as an instructional aid directed towards performance. This takes the form of a “Word Wall” which allows students to choose to listen to voice clips relating to accent, dialect, child language and varieties of register.

DS described using it for his own preparation as being:

“Like an epiphany. Playing with it and it was just the fact that it was joining all the words together and explaining bits and it just came to me this idea that it’s just not all phonetic. You can’t just write the sound...sometimes there are bits of words too.”

DS used the re-representation of language implicit in WordRoot to develop a morphological strand to his literacy work. Taking the idea of the word wall from the software he reversed engineered the software back on to paper with a large display made up of jigsaw pieces representing morphemes. Students re-worked these to develop their words for the week checking these in the dictionary and listing them on a class worksheet. Meanwhile small groups of students took turns to explore WordRoot on the two classroom computers so modelling morphology on paper and through exploration of the application environment. In his later writing about this we can see a developing complexity of understanding about spelling and language issues generally. We can also see him starting to internalise the social literacy ideas that had emerged in the collaborative conversations.

My research continued and developed into a more successful evaluation of the role of ICT in teaching a whole language approach to Word Work and the role of ICT as an aid to students' learning and understanding of spelling.... Through using a program called "WordRoot", I have developed a clearer understanding of morphology and of how word parts - morphemes and affixes - fit together to make more complex polysyllabic words.

This idea seemed to interest the students also and developed into a WordWall of jigsaw pieces, each with its own root, affix or morpheme. The program had shown me that there are many reasons explaining the complexity of the English language and that from this, there should be many different skills that the students need to be taught. Phonic knowledge is essential for 40-60% of the language yet other skills need to be taught so to ensure that the other 60-40% of the language is accessible. The ability of a student to segment words into morphemes, syllables, syllable clusters and roots is a vital tool that the competent speller must have. In the same way, the knowledge of why correct spelling is important is a message that needs to be given to the students, as is the

message explaining why our language is changing, is diverse and holds so many competing rules. Also the idea that students need to be shown that different languages and discourses are used in different scenarios; different spellings acceptable in different text genres; that the study of language is more important than learning 10 words a week.

What we are starting to see here is a richer discourse about language that encompasses instrumentality and the directed curriculum without being bound by it. There are echoes too of the kind of ideas about a sociocultural approach to “whole language” that emerged in the dialogue.

The final development of the subject Design Initiative emerged unplanned and is a possible index of a kind of learning enabled by type 3 and 4 conceptions of the learner as identified by Bruner. In a conversation with his students a connection was made between the kind of texts students were constructing with PowerPoint and how WordRoot was structured as an act of communication. There was a realisation that the class competence in constructing hyperlinks, ironically enough, itself facilitated by the work on Poetry and PowerPoint prior to the pilot Design Initiative project, formed the skills basis needed for the class to co-construct their own version of WordRoot. The paper and screen work done on morphology and based on WordRoot had created a class discourse in which there was a good level of internalised understanding of the morphological and etymological basis of compound words with classical origins. Using the social affordances of ICT in providing an authentic context for collaborative writing, students and teacher worked together on their individual and pair hypertext multi-media pages.

My learning from, and enthusiasm for WordRoot seemed to enhance the student’s interest in language study. I set them all a task investigating morphological and etymological roots of words with obvious “roots”. I.e. bicycle, autobiography, kaleidoscope and decathlon. The students enjoyed the task – both the language research and making a PowerPoint presentation of their findings. What followed was a request from the student’s to replicate WordRoot’s word walls. We made a whole class ‘interactive’ word wall based on our work finding as many ways of saying ‘hello’. The students also made their own word walls, on a variety of topics, such as ‘ways that children of different ages say complex words; ‘text messages’, and ‘sounds of a school’.

SHIFTS IN PEDAGOGY: INTERVIEW EVIDENCE TRAIL

In October 2001 just prior to the main Subject Design intervention, DS was interviewed along with all teacher and University Researchers to gauge a baseline before the main collaborative practice started. After the end of the year DS was interviewed again. Comparing these two interviews there is a contrast between the epistemological beliefs underpinning DS’s self-conception of his role. There is a development from a self-definition in which the teacher vividly presents a body of ideas and activities developed

by others to one in which the teacher works more reflexively and critically to synthesise the directed “Knowledge Corpus” with other pre-existing and extrinsic knowledge. In one model the teacher is the animator of a body of learning provided extrinsically. In the other the teacher is the co-constructor of the knowledge base and pedagogical approach as well as its presenter. This contrast shows the challenges and opportunities associated with professional development as a recently qualified practitioner seeks to negotiate discretionary teaching and learning space in a prescribed curriculum.

DS’s initial approach very much reflects his enculturation as a teacher coming into the profession at the start of this decade. In essence he describes his role as the doer of agenda set by “the government”. He is sceptical and concerned that the initiative may disturb his teaching without good purpose. He mentions being asked to come on the project by senior staff after a probationary year in which the benefits of one half a day a week’s inset were not compensated for by an “unsettled” class he came back to after half a day’s supply cover. In his retrospective statement DS writes:

At the end of my NQT year, when the InterActive project began, I held reservations about leaving my class in order to begin an involvement in a project that would continue to keep me from full-time class practice. My role as a teacher, I felt, was to be in the classroom for the full term - with the odd exception of specifically related (short-term) courses. The idea of becoming involved with a project that would interfere with my classroom practice was not one that I was particularly interested in; my professional development could wait another year, after all, I had only just finished my ITT. Although I had interest in developing a greater use of ICT in my lessons, the project seemed, at that point, to be a hindrance to what I saw as my role as a classroom practitioner.

He can be seen actively filtering the university input so as not to waste his pupils’ learning time.

Another reservation that I held when coming to the first meetings with the InterActive team was that of using Literacy time to teach ICT skills. Using ICT to aid learning in Literacy was a great idea but I was determined not to use Literacy teaching time to show students how to use ICT affordances. The structure of the Literacy Hour was tight enough without adding that of the ICT curriculum. The only ICT skills that I was prepared for the students to use were those they had already acquired through ICT lessons.

He chooses to work on spelling because he sees in it an easier and more relevant link to ICT than “pretty pictures” (his words) on PowerPoint. He uses the early guidance from the university team on using PowerPoint to teach poetry as a more interesting way of teaching about using PowerPoint on the ICT curriculum. The general perspective is one sceptical about the relationship between theory, time from class and student learning.

There are a number of themes that come through from his initial interview including the notion of the teacher as primarily responsible for delivery of centrally determined curriculum.

I still had to learn how to teach it because the government set teaching the literacy strategy so I had to learn it.

(About the school) And resources are good, and everyone follows the literacy hour, which is obviously from the government, but it means that we know what we're doing.

And I think the easiest way to answer that question would be to actually look at a key stage 2 SATs paper and say 'Well that's what the government are asking you to do by the end of key stage 2'. And it's seeing children being able to fulfil those criteria. So writing confidently or reading accurately.

There is a priority placed on the mechanics of strong classroom management.

"I was taught in a year how to make the class sit down and listen to me. I was taught how to teach the literacy strategy in 15 minutes.."

There is little explicit notion of the teacher as expert in subject content. The job is to learn the material provided and there is no evidence using content learned prior to the ITT course or outside school.

I was trained to teach the literacy hour rather than the teachers two years before me who were taught to teach English and then had to convert themselves. It was good for me because I was one of the first teachers to be taught how to teach the literacy hour.

I was one of the first teachers to be taught how to teach the literacy hour. And so I had to learn all the (INAUDIBLE) and terminology and whatever and just trying to teach from a structure which I think works very well.

"We were taught to look at the folder of the strategy and say right, I'm going to teach that..."

It is suggested that a critical role is not necessarily appropriate. Writing later he summarises the position as:

"You are not told to argue with it...you are not the researcher, you are not the literacy chief, you are the one who is good at talking to children."

This is not to suggest that there is no role for the teacher but it is one of how to present, and not what, when or why.

Because basically once we're in the classroom it's ours to teach. We're told by the government what we need to teach, we're told by our subject leaders the areas we need to teach and then it's up to us how we deliver it. We do have other teachers coming in

to watch us and observe so we can discuss whether we're teaching properly and teaching the right things but other than that once we're in the classroom it's down to us.

What is “down to us” appears to be the capacity to engage students and keep them interested. DS makes repeated reference to his folk pedagogy collocation for this: “the wow factor.”

[Comparing schools] you can prepare your lesson with more focus on the learning objective. Over there there's a lot more of the wow factor to keep them interested all the time

I was telling you about the wow factor ... I think that's really important, especially if they're not sure about the subject matter. Later on at perhaps A level when they're choosing a subject to learn you don't need it as much cos they're interested in the subject,

when you're teaching them bits of literacy because they have to learn it then you need the wow factor to catch their imagination

and you maybe put on a stupid voice or you really ham it up basically, give it real melodrama, and so they think 'Wow this is fun, this is good' and they get it, and when they've got the sheet in front of them they can remember the way you did it.

[Giving a reason for apathetic students in his class] I know it comes back to me all the time not having a wow factor. But yeah it's the children that try to push themselves that I really enjoy teaching.

For DS “the WOW factor” was a term used for devices used to re-inforce the memorability of the learning. Observations showed that it appears to correspond with the emphasis on multi-sensory teaching, fast pace and interactivity. It is associated with effective teaching practices taught in ITT courses and also with the school's approach to phonics teaching. It is necessary because without it you cannot assume you will have the pupils' attention because it is not assumed that the learning will have intrinsic interest without such effective presentation. In Brunerian terms the mental model of this learner is one of someone too young to be interested or to know what is best for his or her own good but someone who can be trained and cajoled by smart pace, variety and entertainment. Interestingly this “wow factor” is frequently collocated with the motivational dimension of using ICT. The novelty of ICT is seen as offering transitory excitement whilst in the long term engaging with ICT is seen as an inevitably important life skill. The appeal is to two different models both based on instrumentality:

[About the appeal of computers at home] Yeah at the moment the wow factor but also I think it's got to come in cos if we're asking children to write a newspaper article or

write a story then if they were going to continue that later on in life then they're going to be doing it on a computer

And so it all stems from how technology's used in the outside world to bring it back into how we probably use it for teaching. But at the moment the wow factor as I've said, but later on it's going to be ... I would imagine ways of communicating and methods of communicating.

Accountability takes the form of scrutiny through inspection, observation and results:

Cos up here the focus is on getting good results and teaching good education.

Although he is aware, and his colleagues are aware, that results are not everything and there are particular sensitivities in working in a performance culture with Primary-aged children. He is clear that he is still operating in a particular context.

we consistently get good results so there's a push on getting results which means that there's a ... there's a kind of drive from the head all the way down to make sure the children get the results they're supposed to and keep pushing..

And sad to say, but if you want them to get the results they've got to practise it.

This selection of quotation oversimplifies and doesn't recognise a secondary more muted voice that shows an emergent critique and active mediation of the curriculum in the context of a broad ease with it. There is an undertone of concerns about the inflexibility of aspects of the literacy strategy. For example the teaching of the active and passive voice seems to have been exhausting and beyond its bizarre rationale:

... according to the literacy strategy you teach children to convert and change passive sentences to active sentences and vice versa. And we spent the whole week banging our heads against a brick wall trying to explain to the children the difference. And as far as I could see the only way you ever need to know that is if you're going to be a mystery writer. Other than that you just don't need to know it. ...

It is interesting here to note the fault line between extreme formal demands of language content and limited meaningfulness:

...Because when you're working so hard to try and fit everything in, because you've got obviously a very cramped timetable, trying so hard to fit everything in, if there's something the children are not quite sure of and they finally get it, you think 'Fantastic they've got it'. Then you go 'Oh well yeah ... if you can use it go for it'. (?) It's sometimes a bit disheartening in the way that ... because we're working so hard and the children are working so hard ... if there's not an obvious point. I mean that's one of the things we're supposed to be doing now is highlighting the learning objective at the beginning of the lesson and highlighting it again at the end, making sure they can see

what they've done. And active and passive verbs, 'That's your learning objective, you've got to learn it', 'Why?'

DS outlines a recent deviation from the given model in work done on story writing.

this week we've almost changed the literacy hour for the whole week. We were doing a huge focus on story writing. So ... well tomorrow they're going to write (INAUDIBLE) piece of writing. But all the rest of the week we've worked towards little sections which is not strictly in line with literacy hour. But because the end focus, the end result will be better story writing than it's accepted. And in the same way that after the SATs we do a lot of drama, speaking and listening, which again isn't totally in line with the literacy hour but it's still supportive, because the benefits outweigh the problems by changing the literacy hour. But yeah I think generally as long as you can justify why you're changing something I think it's pretty much accepted.

Even here the exercise of discretion is justified by results and accountability to "government".

I think the government have realised that to ensure you do get decent results and the children are learning properly you have to be a little bit more flexible...

Although DS in common with his colleagues is well aware that results are only part of the picture and may not be an appropriate focus at primary school. Elsewhere he answers a question about ideal and predicted futures with a model of communication experiences as multi-modal and multi-media:

... it's very important that children obviously can write properly using a pen, but I would love to see children being able to ... give them the opportunity to use other methods of recording their work. Whether it be recording their play on video or their transcript on taperecorder or typing or whatever. I think that's brilliant. I think the more opportunity children get, especially at primary school, the more choices they get later on in life. I think that's pretty much my philosophy I think in teaching.

In the recent interview the practical "common sense" views about classroom management continue as the bedrock pre-requisite. For example he remarks that there is "no point in having your [the interviewer's] knowledge of language if the kids won't listen".

Referring to deviations from the directed curriculum he explains that these still have an unofficial status:

If I were being observed I would keep more closely to the government guidelines

I recently gave a Literacy lesson where I was observed by a senior teacher. The only criticism was that I did not fully explain how to use the ICT skills that the children

needed. So I had not used Literacy time to teach any ICT skills – but during that lesson I did make sure that I kept very close to the Literacy Hour guidelines.

But the general comments indicate a clear shift to a more reflective model of teaching and learning. Involvement in the project is “*good for my learning...This InterActive project is getting me to think...rather than just teaching phoneme /e/. I’ve got more of a role in determining what I’m teaching...*”.

Asked why it has worked he gives a non-instrumental answer based on intrinsic interest. “*Why has it worked? It’s increased my interest level ... So many visits you must be interested in what I am doing ...so it must be working*”.

The “wow” factor is less prominent and seems to be re-operationalised: “*I’m learning how I can control this “wow” factor*”. There is an interest in developing subject knowledge that was not previously self-evident: “*I’ve learned about things I didn’t even know were around.*”

There is a more closely articulated awareness of the possible limitations of the directed curriculum: “*If this were to be a way forward the literacy strategy would have to change...If I wasn’t in the project I’d still be teaching phonics and that leaves 40% of the vocabulary not dealt with*”

All this is evidenced best of all in the closing paragraph from DS’s written statement in which he writes of his new engagement with his work in a manner that suggests a model of the learner now focused on the co-construction of knowledge and the testing of knowledge beliefs by evidence (Bruner type 4).

My role in the InterActive project has developed from disinterested (sic) participant to someone who is focused upon researching an area that has a strong link with classroom practice. This has come about due to the support and resources that I have been offered from the University team and due to the success of my research projects. The feedback that I have received from Researchers and other teachers has shown that the work that I am involved in is important in developing not only my teaching style, but other teachers' work too. Through presenting my work at a recent Inset, I have seen that my role as classroom practitioner dovetails with an ability to develop ideas that will enhance student's understanding of language. That through the project, I can research with an end result. That of giving my learning and research to teachers who can use it in their classrooms.

PROVISIONAL FINDINGS AND LIMITATIONS

It is clear that DS has made shift in his conceptualisation of his role as a teacher and of the role of research in his teaching. The initial “canteen culture” doubtfulness about the relevance of collaborative research with a university has given way to a situation in which DS is now working on a DFEE Best Practice scholarship on using ICT to enhance

learning about spelling and also embarking on a MSc on Education, Technology and Society. As the comments above indicate, he remains very practically focused and for him the key benefit of the current situation is that he can test his developing theorisation in the context of his teaching (Bruner Type 4).

The results and interest are continuing into the new academic year as my role within the University team and the Best Practice Research Scholarship has enabled me to become a link between classroom practitioners and researchers. A role which I consider to be vital in terms of ensuring that the curriculum is appropriately aimed.

His relationship with the directed curriculum has also shifted as he reframes the literacy strategy within the overall context of language awareness and as he researches spelling and language generally. His relationship to the directed curriculum has become more complex than direct mediation: he is learning to see the curriculum more critically as he tests it against his own knowledge base and his professional experience. The Literacy Strategy and phonics remains important to him and he has talked about how he can develop his work on morphology, etymology and hard words so that it dovetails with the school's very successful phonics base rather than his work competes with it or "breaks out".

I feel that I have been able to make better use of ICT in my Literacy teaching as I have researched and become more knowledgeable of the English language. It has led me to alter the focus of my spelling teaching to teaching a Language lesson, not just spellings lesson.

One further example exemplifies the shift. Initially DS used the Key Stage SATs spelling test as a pre-intervention test and as general indicator of the progress made by the student. Recently he has become aware of the crudeness of that instrument and is developing an additional test to capture understanding through using pseudo words (see Bryant et al 2000) and clustered spellings based on his own adapted spelling banks This innovation shows a shift away from crude performativity indices.

As a piece of intervention this has been a successful case study. As a piece of research it raises questions. It is harder to be clear about the critical conditions in which this shift in pedagogy occurred. The Software WordRoot played a part but the application would hardly have worked without the mentoring and discussions around language. This in itself raises questions about the technological determinism rhetoric of the role of ICT in "driving up standards."

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