Using a 4x4 framework for whole school literacy development

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Abstract

In this paper we report on one aspect of a whole school literacy research project, Embedding Literacies in the KLA's (ELK), which has drawn on SFL theories of metafunction, rank and strata to develop a metalanguage for use by teachers, students and parents to discuss how texts work across the disciplines of secondary schooling. The starting point for this endeavour is the 3x3 framework, which was originally developed by academic literacy researchers (Humphrey, S. Martin, J., Dreyfus, S., and Mahboob, A., 2010) to organise the resources of academic discourse for tutor training purposes. We report specifically on how we have expanded this framework to build teacher understandings of the configurations of language of the high stakes persuasive genres required by the Australian national literacy test (NAPLAN). The resulting 4x4 framework raises the profile of logical meanings related to field and distinguishes more delicate units of meaning within the clause. By foregrounding how particular language resources relate systematically to meanings from each metafunction at various ranks, the 4x4 has not only provided a framework for teachers to interpret the criteria provided by NAPLAN but to map their own and their students' development of language for learning systematically across the contexts of schooling.

1   Introduction

For almost twenty years, policies adopted by all sectors of secondary education have recognised the value of pedagogical practices which integrate explicit teaching of literacy within discipline learning. More recently, policies which emphasise the value of substantive communication and metalanguage give evidence of the growing concern for the place of language and other semiotic modes in literacy and broader quality teaching pedagogies (eg. NSW Department of Education and Training 2003).

The important contribution of increased knowledge about language for literacy and learning has been recognised with the development of the Australian Curriculum: English, which includes systematic knowledge of the patterns of language and language usage at the levels of whole text, paragraph, sentence and word as well as understandings of increasingly complex spoken, written and multimodal texts (ACARA, 2012). Significantly, the Australian Curriculum recognises that teachers across learning areas are responsible for supporting students to meet the specific literacy demands of their learning area. For middle years students, developing knowledge of the distinctive 'uncommonsense' ways in which language, literacy and images are used in particular discipline areas is crucial for being able to enter the intellectual and knowledge domains of the senior secondary years (Freebody 2011). In terms of language, educational linguists informed by systemic functional linguistics (SFL) have systematically described knowledge development across a number of curriculum areas in terms of genre and register. (eg. Christie & Derewianka 2008, Martin & Rose 2008). In this paper we report on how we have drawn on these descriptions to develop a 4x4 perspective of the key linguistic features of high stakes genres used by middle years students across curriculum areas. Mapping genres from a 4x4 perspective provides a robust framing for

teachers of the configurations of language resources which shape genres in their discipline and importantly, a meta-language, which can be used by teachers and students to talk about the features of academic genres and registers which are shared across disciplines.

1.1. The research study: Embedding literacy in the KLAs

The study reported on, Embedding literacies in the KLAs (ELK), is a 3 year participatory action research project between the Australian Catholic University and Belmore Boys High School. Belmore Boys High School is an innovative boys' high school with 96% NESB and a school population of 370 students. Explicit teaching of literacy within curriculum areas has been a priority at the school for a number of years. However, despite considerable success and the continuing practice of integrated literacy and learning programs, an ongoing challenge for teachers has been to sustain the expert role and substantive classroom communication needed for explicit quality teaching of how 'high stakes' texts work in their discipline. This role depends upon a metalanguage which is sufficiently robust to lead deconstruction of language features of texts; to guide students in selecting and using those features in new texts to assess and provide feedback on students' writing. A key aim of the ELK project is to develop a metalanguage which allows all teachers and students to engage in substantive communication about the language of texts for discipline learning. Sustained use of this metalanguage throughout the teaching and learning cycle is expected to result in a significant improvement in student's control of high stakes writing as measured by formal curriculum assessment tasks and by results in the external writing task, NAPLAN.

1.2 . Theoretical foundations: a 3x3 perspective on academic discourse

Describing the resources at stake in academic discourse has long been of interest to systemic functional linguists. Using theoretical understandings of genre (Martin & Rose 2008), and register (Halliday & Martin 1993), educational linguists have mapped development of language across genres of a number of curriculum areas (Christie & Derewianka 2008) and, from the perspective of register, in terms of resources for creating abstraction, technicality, generalization and objective evaluation (Macken-Horarik 1996). Frameworks which have been developed to frame these resources for teachers include a '3x3 toolkit' (Humphrey et al 2010), which identifies and delimits the semiotic resources at risk in a particular academic context in terms of 'the nature of commonalities' (Macken-Horarik 1996:235). The 3x3 includes linguistic features from each of the three metafunctions of language and at three levels of the text, which are glossed as whole text, phase/paragraph and lexico-grammar. The linguistic resources included in this 3x3 were seen from the perspective of register in terms of their role in:

- Constructing technical, specialized and formal knowledge of the discipline (field)
- Convincing and engaging audiences in distanced, impersonal and objective ways (tenor)
- Organizing clearly signposted, cohesive and abstract texts (mode).

The foregrounding of a meta-functional organization to the toolkit is a central step in connecting teachers' knowledge of isolated language structures and functions to broader meanings. This perspective is particularly important for teachers in Australia who are preparing to adopt the new National Curriculum: English. The language strand of this document is significantly more explicit in organizing language resources according to meaning systems than current syllabus and teacher support documents teachers have been working with.

Subsequent frameworks of academic literacy based on a 3x3 perspective (Humphrey, Droga and Feez 2012) have recognised the overarching role of genre in the selection and organization of resources. However, in working with teachers involved in the ELK project, it has become apparent that a 3x3 perspective does not allow for the important work of the logical metafunction to be sufficiently foregrounded, nor does it allow for resources 'below the clause' to be delineated. In the following section we focus on the subsequent development of a genre specific 4x4 framework to address these issues in the context of the high stakes persuasive genres they are required to write in the middle years of schooling.

Developing a 4x4 toolkit for NAPLAN persuasive writing

While the register perspective provided by the 3x3 framework provides an effective toolkit for building understandings of basic principles of functional linguistic systems, working with teachers and students involved in the ELK project has brought to light the need for adaptations to the original framework.

During the period of this initial phase of the ELK project, the National test of writing for years 7 and 9 known as NAPLAN (ACARA, 2011) focused on persuasive writing. While the marking criteria, influenced as it is by SFL descriptions, does provide guidance as to the language features at stake at various levels of text, it does not link these language features to an authentic context of use. In terms of genre, the purpose of persuasive writing is described as 'to persuade a reader to a point of view on an issue. Persuasive writing may express an opinion, discuss, analyse and evaluate an issue. It may also entertain and inform. …'

Language features related to tenor provide a similar example of the fuzzy expectations of the NAPLAN writing task. For example, high graded sample texts are valued in terms of 'sustained and effective use of persuasive devices… appropriate to style of argument and may appeal to one or more of the reader's reason, values or emotions'. However, the list of persuasive devices provided to the markers are presented as a list of equally valued resources (ACARA 2011) and do not distinguish their different effects in building solidarity and/or authority with the audience.

Closer analysis of the marking criteria revealed that the persuasive genre of analytical exposition, which is produced to persuade audiences THAT a thesis is valid, was a particularly privileged response to the task. This type of exposition has been acknowledged as a key genre for learning across secondary school subjects (Schleppegrell 2004) and even though students of mathematics are rarely required to produce a full exposition, knowledge of the explanation sequences required to support arguments is highly relevant to learning in this area. A focus on analytical exposition therefore enabled ELK researchers to establish with teachers an important shared goal for developing understandings of language and an opportunity to develop a genre specific framework

Drawing on understandings of this genre developed by functional linguists (Martin 1985, Coffin 2006) and by further analysis of successful texts produced by students in response to the 2011 NAPLAN test, the initial 3 x 3 was thus adapted as a toolkit for the more specific context of supporting students to write analytical exposition. A reduced form of the resulting 4x4 persuasive writing toolkit, showing examples of linguistic features at whole text (genre), paragraph (phase), sentence (clause and clause complex) and word/expression level is shown in Figure 1.

Language to	Whole Text (structure & Organisation	Paragraph (phase)	Sentence (Clause & clause complex)	Word & Expression
express ideas (field)	Ideas unfold as stages to achieve text purpose (eg. position statement ^ arguments ^ reinforcement)	Ideas form phases according to subject (eg. Point^ Elaboration ^ Evidence ^Link)	expanded noun groups to describe and classify ..	Technical terms for specific disciplines..
expand & connect ideas (field)	multiple ideas developed and combined logically across text to form an analytical framework	Ideas expanded logically across phases (eg. through cause and effect)	Ideas expand and/or project to form well structured simple and complex sentences	Relating and reporting terms to define, classify, show cause/effect, quote and report
interact with others (tenor)	Proposition reinforced and justified prosodically to convince audience THAT a position is valid	Claims supported, justified, reinforced and/or defended	concessive clauses used to expand and then contract space for alternative voices	Objective evaluative vocabulary (eg. significance, relevance)…
create cohesive texts (mode)	Text organisation made clear through layout, previewing and reviewing of content	Information forms waves from dense, 'packed' language to concrete 'unpacked'	Sentence openers focus attention on topic and flow of information…	Abstract nouns used to package and track ideas …

Figure 1: 4x4 framework of resources for analytical exposition (sample resources only)

As is evident in Figure 1, the 4x4 framework allows resources for constructing logical meanings to be distinguished from those associated with the experiential dimension of field. Given the importance of field in secondary subject areas, distinguishing these meanings allows both metafunctions to be prominent in the framework. The additional layer of word and expression level was considered necessary to provide a space for the important vocabulary building work of the classroom, and to encourage teachers to make explicit the meanings of academic vocabulary beyond technicality.

One potentially problematic area of the 4x4 is the positioning of genre staging at whole text level within the experiential dimension of field. While recognizing genre at a higher level of abstraction than register and as integrating field, tenor and mode choices, descriptions of genre and genre staging in educational linguistics have been experientially biased. The perspective of the 4x4 at whole text level encourages teachers to take the staging as a starting point but to also consider the prosodic structure of persuasive texts and to tease apart the textually oriented organizational units of Introduction, Body and Conclusion from field oriented stages. As will be further discussed below, the notion of an analytical framework at whole text level has been included in the logical meaning strand to account for the expansion of ideas in rhetorically organized academic texts.

Working with the 4x4 toolkit at whole school level

In presenting the 4x4 framework to teachers, a great deal of care has been taken to maintain the theoretical integrity of language as a multi-functional and multi-layered resource for meaning. Such a focus is essential in supporting students to access and generate the complex texts needed for learning in the secondary years and has been possible due to longitudinal nature of the ELK project and the extraordinary commitment of the teachers to their professional development. While the meta-language used with teachers does make links with that within both the Australian Curriculum: English and the marking criteria for NAPLAN (ACARA 2011), the 4x4 maintains explicit links to context through genre and register and also enables a perspective of realization to be taken through considering resources at the level of the clause and word to be serving meanings at higher levels (eg. the use of nominalization to create the 'packed' language of paragraph previews (hyperthemes).

However, the decision to maintain the complexity of the functional model has brought with it the challenge of scaffolding the learning of the resources and their uses for teachers. Working with the metaphor of a toolkit has enabled teachers to conceptualise language as a multilayered and complex system of resources but also to keep the focus on language as a resource for doing literacy work. The initial presentation of the 4x4 framework shown in Figure 1 included an overlaid image of a four drawer toolkit with multiple compartments, representing the possibilities available for construction work. The literacy work of different discipline teachers has been conceptualized metaphorically in terms of the particular trades within the building industry. Literacy work shared by teachers across curriculum areas, such as the NAPLAN persuasive writing task, have been conceptualized as complex building projects, which require a number of trades and tools from each layer and compartment of the toolkit. The symbolic meanings created through the toolkit metaphor have proved a valuable way of convincing teachers from across faculties of their vital role as a teacher of literacy, bringing to their students knowledge and understandings of language which could only be provided by them. The metaphor has continued to be of benefit in developing a classroom meta-language to talk about the relationship between linguistic resources and context of use.

Working with the toolkit to create literacy pathways at faculty level

Having developed an initial understanding of the resources of the 4x4 in relation to analytical exposition, the ELK team continues to work closely with faculty teams to select the suite of tools best suited to the work of analytical exposition in their discipline area. During the first phase of the project, each faculty was involved in developing model analytical expositions, produced in response to authentic assessment tasks set within a unit of work at syllabus stage 4 or 5. Working with this model, teachers and ELK consultants have worked 'elbow to elbow' to deconstruct its language features, to identify a relevant set of linguistic features to make explicit to students and to develop assessment criteria and classroom teaching and learning activities.

As discussed above, the typical entry point for introducing the genre is through its experientially oriented structure. However, with complex genres such as analytical exposition, it is also important to scaffold the development of multiple ideas around which to build logical arguments- this has been termed the analytical framework. In all disciplines, teachers have worked successfully with the notion of the analytical framework to organize the multiple ideas from class brainstorms and to group them into 'packages' according to the demands of the set question. Modelling this concept with students has included concrete demonstrations, such as throwing a pack of playing cards on the classroom floor and working with students to reorder them according to different criteria (eg. colour, suit, number). This has been helpful in explaining to students the possibilities available in analysis and the discipline specific nature of such analysis. In some discipline areas analytical frameworks are clearly visible in the discourse. For example, in geography in the middle years, a common way in which issues are analysed is in terms of impacts on the environment, which is typically further broken down into components such as vegetation, soils and wildlife. In subject English however, where the curriculum is not typically organized around field, analytical frameworks tend to be more specific, according to the particular issue or topic being examined. Working with a topic of 'adventurers and risk-takers', for example, one English class used an analytical framework to explore the responsibility of society for rescuing risk-takers, grouping these in terms of positive and negative effects (eg. economic, social, moral).

Expanding ideas at the whole text level opens up a number of potential pathways for language and literacy development. For some faculties, the pathway was been through field, developing one of the ideas within the analytical framework to model components of 'point', 'elaboration', 'example', 'link' at paragraph level and then moving to group and word level to build technicality appropriate to the discipline. For other faculties, the move has been to the textual metafunction, working at word level with abstract nouns to name the 'packages' identified in the analytical framework and then using these to build macro and hyper themes (ie. previews and reviews) to signal to the reader the organization of information.

In subject English, the focus of persuasion in teacher education and professional development has traditionally been on rhetorical devices such as parallelism, amplification and rhetorical questions (Andrews 2011). Working with the ELK team, teachers have been able to relate these resources to their context of use, drawing on discourse semantic features of appraisal and lexico-grammatical resources such as concessive clauses as resources for positioning audiences in objective and impersonal ways.

1.3 Conclusion

While an analysis of the teaching and learning resources developed for modeling analytical exposition and other genres is beyond the scope of this paper, the initial professional development phase of the ELK project described above has created high expectations and generated a great deal of confidence amongst teachers in their role as literacy educators. With continuing professional development using the 4x4 framework to systematically describe the valued linguistic resources of all genres needed for learning in the KLAs, there is little doubt that students will be well supported in developing high stakes literacies for learning.

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