

TAILORING AN EAP COURSE TO DISCIPLINARY NEEDS: THE UNIMAS EFFORT

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ABSTRACT

In this paper we sketch our response to the problem of matching the UNIMAS English for Academic Purposes curriculum with the various subject needs of our students. We start by accepting a functional view of language and the intimacy of language and context—in this case the contexts of various disciplines. We argue that the academic language needs of our students are closely related to the purposes of the disciplines they are being inducted into. That is, different disciplines foreground different types of language—in terms of genre, grammar and lexis. These variations are noted, exemplified and explained. Finally, we outline the genre-based pedagogical cycle that we have adopted to translate theoretical insights into effective practice.

Introduction

The transition from school to academia is a traumatic experience for many students – both socially and academically. For the first time in their passage through formal education they are required to engage, as apprentices, with the meanings of specialised disciplines in ways for which few are prepared. For many, the processes of reading and writing – and this, after all, is what specialised school learning is all about—take on new meanings. Reading can no longer serve as largely a process of decoding and memorisation and writing becomes much more than copying or imitating. Students are now required to construct new knowledge from and in text and critique this knowledge. In this paper we wish to sketch some of the features of the English for Academic Purposes course developed in the Centre for Language Studies at Universiti Malaysia Sarawak (UNIMAS) which emerge from understanding of these new learning demands and the role of language in this learning process. The course is taken for two hours per week over a 16-week semester by all students.

We begin by considering the theoretical principles which have guided our decisions about course content and pedagogy. We then look at course content and exemplify our approach by considering a sample genre. Finally, we consider pedagogy and outline the teaching-learning cycle we have adopted.

Guiding Principles

The course took shape around a number of guiding principles. These principles emerged from models of language and learning developed and applied by Halliday & Hasan (1985), Halliday (1978), Martin and Rothery (1980, 1981), Macken-Horarik (1996) and the work of Vygotsky (1962; 1978; 1979; 1982-1984) and Bruner (1986). The core principles are:

- a. that language is a system of resources for making meaning (Halliday, 1994: xvii) ;
- b. that language and learning are not only individual but essentially social (Vygotsky, 1962: 94);
- c. that speech and writing have fundamentally different purposes, structures and grammars (Halliday, 1985);
- d. that language purposes and text types are socio-culturally determined and staged in relatively stable ways to achieve these purposes (Martin, 1984);
- e. that the structures of language are the way they are because of the meanings they have evolved to construct (Halliday, 1994: xx), and
- f. that in order to teach students explicitly how written language works, a metalanguage or language for talking about language, is needed.

The first principle is the basis of our concern with meaning in the construction of specialised knowledge. In fact Halliday and Matthiessen (1999) suggest that we talk not about knowledge or knowing, but about meaning (1999:1). Thus, we can reconceptualise ‘learning knowledge’ as ‘learning meanings’ (Halliday, 1975). And as meanings are constructed in language (mostly), language assumes a central place in the whole process (Cullip, 1999).

The second principle informs our view that learning is essentially a social, interactive process and that meanings are constructed, reconstructed and deconstructed, challenged and changed, through negotiation with ‘meaning experts’ (be they care-givers or teachers). The social nature of learning and the type of scaffolding provided by the ‘expert’ are central to the learning process. The expert models the task, controls the focus, the size and complexity of the task appropriately, and ensures conditions for success (Cullip, 2000a). In Bruner’s (1906) words:

“What the tutor *did* was what the child could *not* do. For the rest, she made things such that the child could do *with* her what he plainly could not do *without* her.”

Principle 3 reminds us that specialised knowledge is built (not simply 'transferred') in written language and that this language is very different from that used in building the common-sense meanings of the home and community. Learning to control this abstract written language means learning to control the meanings of the discipline.

The notion of 'genre', as developed by Martin (1992), referred to in principle 4, is a powerful tool for examining the purposes of different disciplines and the realisation of these purposes in words and grammar (lexicogrammar), as noted in principle 5. Genre may be conceptualised as an evolved institutional text-type that is staged towards a purpose.

Finally, in order to talk about how specialised language works, a metalanguage is needed. While traditional and formal grammatical categories are unable to cope with our focus on meaning, Halliday's functional grammar (1994) provides the means for talking about much of our exploration of texts.

Thus, we moulded the course around the following pillars: the first relates to how we conceive of language (informs our orientation to curriculum), and the second to how we conceive of learning (informs our orientation to pedagogy):

1. Different disciplines have different purposes and employ different **genres** (or text-types) to achieve these purposes; these genres are characterized by different types of language functions, structures and words. We want to make explicit to students what these purposes and genres are, and how the meanings of the discipline are coded in the lexicogrammar. Without this knowledge, students can hardly be expected to successfully cope with the academic reading and writing expected of them.
2. Learning is a social, interactive linguistic activity involving modelling, joint negotiation of meanings and instructional **scaffolding**. We want to provide fairly structured, sequential teaching/learning activities which incorporate these learning processes (Cullip, 1999; Hunt, 1994). Without this type of expert guidance, students are either left dangling their feet above the water, never to get wet, or are thrown off the deep end, often to drown.

In summary then, the course aims to introduce students to the genres characteristic of their particular discipline and to scaffold their understanding of the types of meanings built in these genres and how these meanings are coded in the lexicogrammar.

Science and Social Science: Purposes, Genres, Grammar

An examination of the specialist written texts of both the sciences and social sciences (and also the humanities—but this is a negligible area at UNIMAS) will

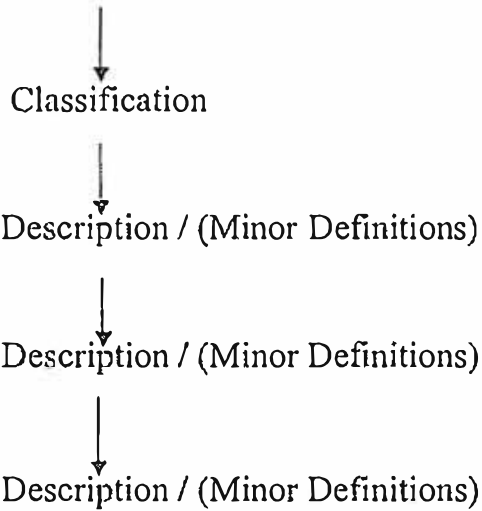
differences in purpose (e.g. see Cope *et al.*, 1993; Halliday & Martin, 1993; Martin, 1989, 1991; Unsworth, 1993; Wignell, 1991; Wignell, *et al.*, 1987) The job of Science is to classify, describe and explain. The job of Social Science is to classify, describe, argue and discuss. The language resources foregrounded too are different. Science is built on technicality – the scientific naming of phenomena, including sequences of activities which are distilled into a technical thing. For example, in geography, the technical thing ‘evaporation’ simultaneously encodes the medium (water), the processes (heating/separating/moving) and the result (water vapour). It distils into one word, meanings which would otherwise have to be coded across a series of clauses. Without technicality, the work of scientists would be impossible.

Social Science attempts to go one step further by generalising the world into abstract things, and then coding these things and their relationships as technical terms. For example, the common-sense abstraction ‘surroundings’ becomes the technical term ‘environment’ in the Social Sciences, thus enabling it to contrast, as ‘environmental’, with ‘economic’, ‘political’, ‘health’, ‘technological’ and so on.

The course we have developed runs in two parallel streams, one oriented towards the Physical Sciences and the other towards the Social Sciences. Each aims to explicitly highlight, in a broad way, the genres, functions and language features characteristic of each group of disciplines. In the Physical Science stream, students are introduced to the information report, explanation and argument genres; while the Social Science stream focuses on the information report, argument and discussion genres. In the Physical Science stream we have included the argument genre as the doorway to applied concerns where the Physical Sciences are increasingly questioning their own claims to truth and address political, socio-economic, moral and ethical concerns. To do this requires moving beyond claims of ‘fact’ to reasoned argument for a particular application of knowledge in the form of technology.

To bring matters a little closer to the ground, we would like to very briefly look at a particular genre, the information report, and some of its associated language functions and structures. The information report is common to the discourses of the Physical and Social Sciences. Reports give accounts of phenomena as they are. Starting with common-sense (non-scientific) understanding, they function to build up non-common-sense (scientific) perspectives on reality through the setting up of technical terms (through definitions), the development of relations between these terms (through taxonomies), and the description of salient aspects of the phenomena under study. The prototypical generic structure of this genre is shown in Figure 1. Note that the ‘introductions’ and ‘conclusions’ so favoured by students are not functional in this genre. Table 1 shows a short information report with these stages labeled.

(General statement/ Major definition/ Classification Cue)



[Note: Stages in brackets are optional.]

Figure 1: Generic structure of the information report

Table 1: Generic mark-up of an information report

Major definition Classification cue	<p style="text-align: center;"><u>Computers</u></p> <p>A computer is a machine that manipulates data according to a predetermined sequence of commands to produce a desired result. Computers are classified into a number of categories.</p>
Description 1	<p>The most familiar computer is the fast-developing microcomputer. It has a single-chip processor and all the main parts of the processor are in the one device. This allows for greater reliability, smaller size and lower power consumption. The integrated circuit is connected to the memory and so allows the processor to work with a limited amount of information at high speed, using disks to hold other information. The best known are the PC, originated by IBM, and the Macintosh, originated by Apple.</p>

In order to classify, attributive relational clauses or existential clauses are typically chosen. Existential clauses (There are ...) often function to cue a classification, e.g.:

(Curtis in Reynolds, 1992: 312-313)

Snakes are reptiles (cold-blooded creatures)

(Derewianka, 1991: 54)

The sensory division has two sets of neurons

phenomenon *parts*

phenomenon (cue to) *parts*

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To build up technical terms – that is, to define – a number of grammatical resources (underlined) can be used, including the following:

elaboration – parentheses

snakes are reptiles (cold-blooded creatures)

(Derewianka, 1991: 54)

elaboration – addition of a nominal group

In a word-writing or logographic writing system, the written ...

(Fromkin & Rodman, 1998: 499)

elaboration - embedded clauses

To write these syllables the Japanese have two syllabaries, each containing forty-six characters, called kana.

(Fromkin & Rodman, 1998: 501)

identifying – identifying relational clauses

A keyboard is, at its simplest, a bank of switches whose individual states can be detected by the computer system.

(Cook & White, 1985: 69)

identifying - naming processes

The loss of water vapour from the plant body is known as transpiration.

(Curtis in Reynolds, 1992: 418)

Such extra marks are called diacritics.

(Fromkin & Rodman, 1998: 504)

Descriptions are typically built through attributive relational clauses (processes in italics) and, particularly in relation to the behaviour of moving phenomena or metaphorical movement, material clauses (processes underlined), e.g.:

The atoms or molecules of gases *are* widely spaced ...
(Zimmerman, 1989: 4)

However, liquids *have* a definite volume.
(Zimmerman, 1989: 4)

The male of the species builds a small tunnel-like nest of weeds in the breeding grounds in spring.
(adapted from Roberts, 1986: 352)

Animals cannot use these materials directly for two reasons.
(Campbell, Mitchell & Reece, 1994: 413)

From here the molecules travel in the blood to other blood cells.
(Campbell, Mitchell & Reece, 1994: 413)

Within the motor division, neurons of the so-called somatic nervous system carry signals to skeletal muscles ...
(adapted from Campbell, Mitchell & Reece, 1994: 555)

All processes are in the simple present tense, which codes the factual status of the propositions. Student accuracy problems with this tense are well-known. We believe that problems with the third-person singular 's' ending are the result of fossilisation (Selinker & Lamendella, 1978). The solution that we have found to be fairly effective is to teach the rule (again!) and explicit proof-reading strategies.

Another major resource for describing is the nominal group, which, because of its elasticity, proves to be a powerful textual tool. Students are shown how the nominal group is used to pack many meanings into a single clause, especially through nominalisations (in bold) and embedding (in double square brackets), e.g.:

... a **partnership** of fungus and algae [[living together [[to help each other]]]].
(Heffernan & Learmonth in Martin, 1990:01)

the observation [[that during times [[when the most **rapid transpiration** is taking place]] <<– which is, of course, when **the flow of water** up the stem must be the greatest - >> **xylem pressures** are characteristically negative (less than **atmospheric pressure**)]].

(Curtis in Reynolds, 1992: 419)

Nominalisation is characteristic of writing in general and scientific writing in particular. Science, as we have seen, turns our world of happenings into a world of things – which it then proceeds to group, pull apart and explain. Thus the nominalisations in the above extracts code what are actually processes in our common-sense world. Students tend to have some difficulty with nominalisations (and other forms of grammatical metaphor – see Halliday & Martin, 1993; Cullip, 2000b) in reading and writing science. In our course we spend considerable time teaching students to ‘pack’ meanings into, and ‘unpack’, nominalised phrases and clauses.

Other language features of reports worthy of note are the lack of intermediate modality (i.e. no ‘may ...’, ‘perhaps’ or ‘definitely’), absence of personal voice (no ‘I’ or ‘we’), the use of language for comparing (e.g. comparative conjunctives, and adjectival comparatives and superlatives) and the constant Theme pattern (superordinate class or subclasses as clause Themes) (Bloor & Bloor, 1995: 90).

In addition to the grammar characteristic of particular genres, the course highlights general academic vocabulary that is not indexical of any particular discipline. Thus, items such as the following are examined in context and put into new contexts:

dimension	characteristic	indicate
constituent	aspect of	implicate
function	specific	initiate

Reports are often embedded in other genres, especially explanations (and vice-versa) and quite complex macro-genres can result (Martin, 1994). After exploring prototypical examples of specific genres, students are given exposure to these more realistic texts.

So far we have sketched the ‘what’ or curricula orientation of the course. Now we wish to outline ‘how’ we try to guide, or scaffold, students through the process of working with the language of science.

The Teaching-Learning Cycle

In mastering a particular genre, the teaching-learning process under the genre-based approach is seen as a cycle (New South Wales, 1990). Underlying this cycle is the assumption that before students can be expected to produce a text (in that genre), they need to understand the structure and language features of the genre (Hammond, *et al*, 1992). Students' command of a genre develops as they move through a number of cycles. Unfortunately, the brevity of our course does not allow for more than one pass through the cycle for any particular genre.

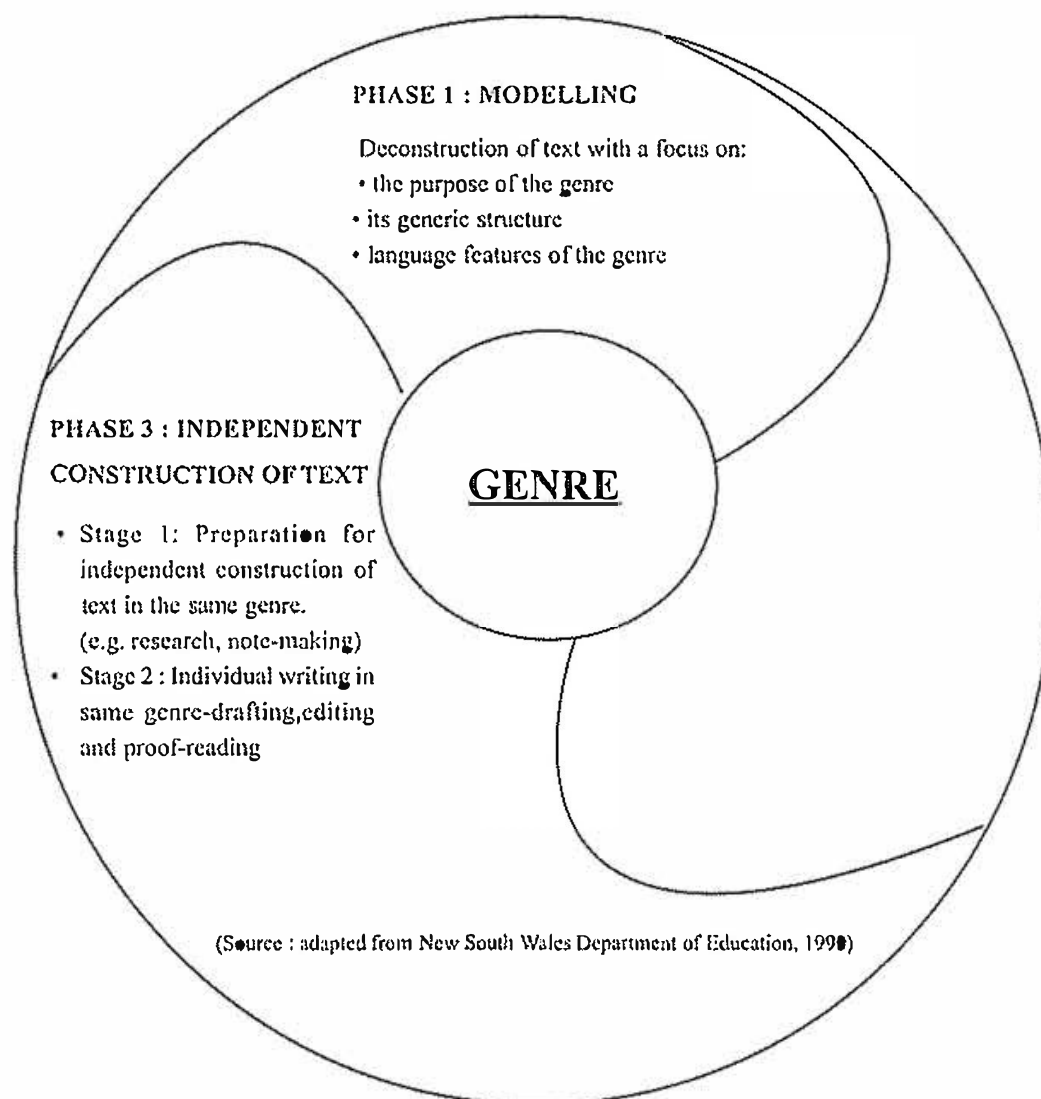


Figure 3 : The Teaching-Learning Cycle

There are three main phases in this teaching-learning cycle and movement through the cycle is made in a clockwise direction (Figure 2). In Phase One (modelling), texts from the chosen genre are introduced. These texts are taken as 'models' of the genre. This phase is essentially a 'reading' one that sees the teacher taking the role of the expert. It begins with the deconstruction of a model text – which involves looking at the purpose of the genre (and specifically the text referred to), how text is organised in this genre (i.e. its generic structure), and the language features typical of this genre.

In our course, the authentic texts chosen are of different lengths and levels of difficulty, and cover the different fields that reflect the academic programmes of our students. Thus, in one semester, when the course is offered to students from the Cognitive Science, Engineering, Information Technology, Medical, and Resource Science & Technology faculties, the texts chosen have a physical science bias; while in another semester, the texts chosen are social science-flavoured for students from the Counselling, Creative Arts, Economics, Human Resource Development, Social Science and TESL programmes.

In addition, in this course, we look into three other reading-related areas: vocabulary study, reference, and three-level comprehension skill development.

The purpose of Phase Two (joint-construction of a new text) is for the teacher and students to jointly negotiate and write a text. Having deconstructed model texts in the previous phase, students should now have a clear picture of the text they aim to produce.

Although the teacher still has an important part to play, the students take on a more active role in this phase, which consists of two stages. In the first stage, students prepare for the writing of the text through activities such as gathering information, reading up on materials in the field and making notes. This is basically a field-building activity where students obtain and organise information to form the 'content' of the written text to be produced.

In the second stage, the teacher and students jointly construct the written text in class. This is a group activity which takes place in two steps. It begins with a plan, where teacher and students decide, for example, the appropriate sequence of the 'points' to be presented based on their understanding of the field and the genre under focus. Using these notes, students contribute their suggestions (i.e. words, phrases, clauses, sentences) to the text and the teacher writes these on the board. The teacher helps to shape their text by giving comments, asking questions and, importantly, offering choices, focusing on the stages of the generic structure and associated language features - so that gradually the text becomes an approximation of the genre concerned.

Joint construction can also be carried out in smaller groups or pairs so that students have more collaborative practice in gaining control over the genre.

In the course at UNIMAS, because of time constraints, out of the three genres studied per semester, for the two genres, the first stage mentioned above is omitted. Students are instead provided with notes or diagrams to convert into written texts. For the third genre, students go through both stages, and are scaffolded into the third phase by reading and gathering information in the field (from texts provided), joint construction of the text with the teacher, and joint construction in pairs with peers.

In addition, we have sessions which specifically focus on other aspects of academic writing – nominalisation, quoting and paraphrasing ideas, the mechanics of citation and referencing, and proof-reading and editing.

Having been guided through mastery of the genre, students move into a more independent role in Phase Three (independent construction of text). This phase provides students with the opportunity to produce a written text on their own.

Scaffolding occurs at both the macro and micro levels of the cycle. The whole cycle can be seen as moving from dependence to independence through the crucial joint construction stage; while at the micro level, the joint construction of text affords the opportunity for instructors to shunt students between ‘common-sense’ oral language and technical written language, employing a meaning-focused metalanguage to facilitate the process.

Conclusion

The English for Academic Purposes course conducted at UNIMAS is built around principles derived from coherent theories of language and learning. It aims to cater for the broad differences in the language needs of students from the physical and social sciences. By recognising that meanings are actually built in and not through language, we are able to focus on the language resources used to build the specialist meanings of these disciplines. We keep no secrets: students are taken on a joint exploration of the way in which these demanding texts are constructed. The teaching-learning cycle moves the apprentices forward by dismantling supporting pedagogical scaffolds as their knowledge and skills develop. The results have been satisfying with many students emerging with a new confidence in themselves as writers (of academic English) and new understandings of written text.

As we learn more about how knowledge is constructed in text, we continue to fine-tune the course. It is our hope that others looking for a firm linguistic anchor for the development of an EAP course may learn from our experience.

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