

Meaning-making in academic writing: A comparative discourse analysis of student essays

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Abstract

This article reports on a discourse analysis of academic essays written by two groups of second-year university students. The categories of analysis are three key features representing each of the three main functions of language identified by Systemic Functional Linguistics. The ideational function is represented by logical relationships, the interpersonal function by appraisal, and the textual function by thematic development. The pre- and posttest essays of all the members of a subject-specific and a mixed group of students were electronically tagged for Logical Ideation and Appraisal, whereas the pre- and posttest essays of only one respondent in each group were analysed for Thematic Development. Main findings were that students in the cross-disciplinary group acquired a more marked command of stance and engagement than the members of the subject-specific group. They also acquired a more varied repertoire of lexico-grammatical devices that facilitate cohesion and mark logical relationships. Students in the two intervention groups improved about equally in terms of their ability to develop an argument systematically. The results showed that a visible pedagogy and ample opportunity for practice are effective, irrespective of whether the focus of the intervention is on one particular subject-field or a cluster of subject-fields within a broad disciplinary area.

Introduction

The article reports on an analysis of academic essays written by two groups of second-year university students with regard to key features representing each of the three main functions of language identified in Systemic Functional Linguistics. The *ideational* function is represented by **Logical Ideation**, the *interpersonal* function by **Stance and Engagement**, and the *textual* function by **Thematic Development**. The aim was to determine whether a fine-grained linguistic analysis would support the results of analytic scoring, while also providing additional information on the effectiveness of teaching strategies within a critical genre-based framework.

First, the research is situated against the backdrop of the generic-specific debate in language teaching, and Systemic Functional Grammar as a theory of how language works. This is followed by an overview of the background to the research; a description of the methodology, and a discussion of the findings.

Theoretical premises

Two issues in the pedagogical and theoretical literature are pertinent to the research on which I report in this article: the generic-specific debate in applied linguistics, and the use of Systemic Functional Grammar as an analytic and a pedagogical tool in genre-based language work.

The debate about the level of specificity at which English for Academic Purposes (EAP) should be taught, has been continuing since the 1980s. Authors such as Widdowson (1983) and Hutchison and Waters (1988) have expressed a clear preference for wide-angled interventions that emphasise learners and learning in general, rather than target texts and practices. On the other hand, scholars such as Faigley and Hansen (1985), Tedick (1990), Raimes (1991), Berkenkotter and Huckin (1995), and Hewings and Hewings (2001) have articulated a preference for narrow foci in EAP programmes. This latter group has argued that there is a distinct relationship between disciplinary writing conventions on the one hand, and epistemological and social practices, on the other, which calls for narrow-angled approaches. A middle position has been assumed by applied linguists such as Dudley-Evans and St. John (1998), who have expressed the opinion that lecturers should first assist students to develop 'core' academic skills, and then facilitate the accomplishment of more specific skills. Members of a fourth group, including Bruce (2008) and Hyland (2002; 2009), have argued that since university students are typically registered for a variety of academic subjects EAP courses should not be too narrowly focused because students need to move confidently between the discourses of all these disciplines. In faculties of humanities, where the academic essay is the most frequently required written genre (Author, 2007), this debate raises questions as to whether it is best for students to acquire essay-writing skills within particular disciplines, or whether interventions should be more broadly focused.

To answer the question about the relative effectiveness of different course types or foci value judgments should ideally be made on the basis of students' actual performance before and after an intervention. Different types of 'measurement' could be used, for example assessment according to a holistic or analytic scoring rubric, and linguistic analysis in terms of the presence and/or absence of certain formal or functional features. The overarching project included both these methods of evaluation - the main purpose of the discourse analysis being the justification and/or explanation of the scores obtained from the analytic scoring. Systemic Functional Grammar was chosen as the theoretical framework, since it describes language in terms of pattern and function in its context of use, which resonates with the socio-cognitive focus of critical genre-based pedagogies.

As mentioned in the introduction to this article the primary focus of SFL is describing language in terms of three types of meaning, *viz.* the ideational, interpersonal and textual. In addition, a rank hierarchy is distinguished (compare Halliday, 1994; Halliday & Mathiessen, 2004), which comprises the clause complex, the clause, the group or phrase, the word, and the morpheme. Every clause reflects all three by representing experience, interacting with another person, and organising the message appropriately: **Experience** is packaged as participant, process and circumstance, each with a hierarchy of subordinate categories; **Interaction** is packaged as mood and appraisal: the kind of commodity being exchanged, and the way speakers position themselves in their messages; and **Textual meaning** is packaged as cohesion, theme and rheme, and text structure.

For the discourse analysis of the essays one key feature of each of the three main functions was selected in order to justify and explain at least some of the findings based on the quantitative analysis of essay scores. The section describing the essay-writing procedure provides detail on how these features were selected.

Methodology

Overall design

A quasi-experimental design, making use of quantitative as well as qualitative methods, was utilised. The decision to select this type of design was primarily based on the researcher's desire to prove the hypothesis that irrespective of the teaching method

being used, a stronger subject-related focus would result in stronger motivation, which in turn would result in better performance by students. Normally this type of design involves a pre-test and a post-test administered to all the members of a single respondent group. However, in order to determine not only the effectiveness of a particular teaching approach (in this case a genre-based approach), but also the relative effectiveness of narrow-angled and wide-angled applications of this approach, two groups were involved: one group receiving an intervention focused on a specific academic subject (history), and the other accommodating students enrolled for a variety of humanities subjects.

The limitations of this type of design is that the sample size may impact on the generalisability of the results, that differences in the demographics of the groups as well as differences in the interventions (syllabi and presentation) might introduce confounding variables and complicate a comparison, and that time differences may produce learning effects: that is, if the interventions are not administered simultaneously, it is likely that the course designer will learn from experience and introduce corrective measures in the second intervention. All of these challenges are applicable to the research on which I report here. Thus, it may be argued that because there were too many differences between the groups the across-groups comparison is not as valuable as the within-groups comparison. Still, a number of measures were introduced to minimize the lack of comparability: Students participating in the two interventions were at the same academic level (second year undergraduate); the syllabi were largely structured in the same way; the pre- and post-tests were written under similar conditions; the same categories were used for the qualitative analyses; and the statistical tests used for analysing the quantitative data (the Wilcoxon signed-rank test and the Mann-Whitney U-test) were designed specifically for small samples.

Participants

The subject-specific intervention group, who self-selected for the course, comprised sixteen students with History as a major subject in their second year of study, and the cross-disciplinary group included eleven students with a variety of majors in humanities disciplines. Tables 1 and 2 summarise the demographic profile of the two student groups:

Table 1 Socio-demographic profile subject-specific (History) group

Respondent	Race	Gender	Mother tongue
1	Indian	Female	English
2	African	Female	Other African language
3	African	Female	Setswana
4	African	Male	Other African language
5	African	Female	IsiZulu
6	African	Female	Other African language
7	White	Female	Afrikaans
8	African	Male	Sepedi
9	African	Female	Sesotho
10	African	Male	Sepedi

Table 2 Socio-demographic profile and academic focus of the cross disciplinary group

Respondent	Race	Gender	Mother tongue	Academic focus
1	White	Female	Afrikaans	English Studies
2	African	Female	IsiZulu	Political Sciences
3	White	Male	English	English Studies
4	White	Male	Afrikaans	Philosophy
5	White	Female	English	Journalism
6	White	Male	Afrikaans	Philosophy
7	African	Female	Portuguese	Sociology
8	African	Female	Setswana	Political Sciences
9	African	Female	Isizulu	Political Sciences
10	African	Female	Setswana	History
11	African	Female	Sepedi	Economics and Business Sciences

Intervention and essay writing procedure

All students who took part in the project received the particular intervention (narrow-angled or wide-angled) along with a pre-test and a post-test. The participants signed a

letter of consent at the beginning of the course to allow the use of their essays and their survey responses for research purposes.

For the **subject-specific** group the pre-test assumed the format of a 50 minute in-class essay during the second week of the module on a topic based on the content of the second-year History curriculum: *Discuss black reaction and resistance to the Natives Land Act of 1913*. Students were required to study source materials from their History reader during the preceding week, and were allowed to use the reader as an in-class resource.

The duration of the intervention was 14 weeks, following a critical genre approach. This approach is based on the belief that genres embody the purposes of the discourse communities they serve (Swales, 1990); draws on Vygotskian socio-constructivism (Vygotsky, 1978); and is staged according to Teaching and Learning Cycle of the Australian genre school, which starts with the exploration of texts (deconstruction), followed by joint construction of texts by the teacher and the class, independent construction of texts, and critical reflection on the basis of self-, peer and teacher evaluation (Cope & Kalantzis, 1993:2000).

The syllabus comprised seven study units, including an introduction to historical discourse; exploration and application of preferred modes of writing in historical discourse, *viz.* narrative, explanation and critical analysis; moving from dependence to independence in writing an academic essay, with particular emphasis on writing a good thesis statement and supporting it with evidence from primary and secondary sources; and reflecting critically on the essay.

The intervention was concluded by a post-test, for which the conditions were exactly the same as for the pre-test, only the topic was different: *Discuss how segregation affected the social and economic situation of black South Africans*.

Students who enrolled for the **cross-disciplinary** intervention had to write their 50 minute in-class essay on the topic of *Poverty in Africa*. All participants received a reader containing articles on general aspects of poverty in Africa a week before the pre-

test essay, and similar to the subject-specific group they were allowed to use the reader as an in-class resource.

Similar to the subject-specific group they participated in a 14 week intervention following a critical genre approach framed upon the Teaching Learning Cycle of the Australian genre school, which draws upon a considered combination of Hallidayan Systemic Functional Grammar, Vygotskyan Social Constructivism and the Critical Literacies approach in academic development.

First, an introduction was given to ‘academic discourse(s)’; followed by an overview of the modes of writing used most frequently in humanities disciplines, with an emphasis on the types of claims and the types of evidence used in academic arguments; and concluded by scaffolded instruction on writing academic essays. Similar to the subject-specific intervention each study unit included a set of outcomes and a learning component comprising theory, model texts and a variety of authentic task types, some of which had to be completed collaboratively in class, and some which were given as homework.

The syllabus for this intervention differed from that of the subject-specific module in that argumentative strategies were emphasized more strongly. This difference in the curriculum could be motivated by the fact that humanities disciplines differ in terms of the rhetorical modes they favour. In addition, more emphasis was placed on handling stance and engagement than in the subject-specific syllabus, as it had been learned during the subject-specific intervention that students needed more practical experience in using lexicogrammatical resources to express stance and engagement.

For the post-test they were allowed to choose from a list of topics on various issues relating to poverty in Africa, which had been provided by the relevant academic departments upon my request:

- To what extent was poverty an inevitable by-product of European colonialism in Africa? (History)

- Whose obligation is it to do something about poverty in society: the rich or the poor? (Philosophy)
- Whose obligation is it to do something about the moral problem of poverty: the poor or the government? (Philosophy)
- Analyse the poem "London" by William Blake (in the *Norton Anthology of Poetry*) OR "An abandoned bundle" by Oswald Mtshali (in the *Paperbook of South African Poetry* ed. Chapman) paying close attention to the way the poem depicts both physical and spiritual poverty (English Literature)
- Discuss how Boesman and Lena are dehumanised by poverty and racial discrimination in Athol Fugard's *Boesman and Lena*. Refer closely to the text throughout your discussion. (English Literature)
- The policy gap and poverty (Political Sciences)
- Famine and hunger are often associated with poverty. How can this be combated through policy initiatives? (Sociology)
- Evaluate the United Nations' Millennium Development Goals (MDGs) as a global strategy to arrest poverty, by referring to the MDGs' normative as well as practical contribution to the plight of the poor (Public Administration)

The assessment instrument for the quantitative analysis of the essays was a scoring rubric comprising 15 items divided in four main categories (Use of Source Materials, Structure and Development, Language and Style, and Editing), each scored on a seven-point scale. The pre-test as well as the post-test essays were scored independently by two raters. For each intervention descriptive statistics were used to indicate the improvement per candidate, per item, and per cluster (dimension) of items. Thereafter statistical tests were conducted to calculate the probability that the improvement was statistically significant.

As mentioned before, the conceptual analysis focused on a key feature of each of the main functions of language: Logical relationships were chosen to represent the ideational function; Appraisal was selected to represent the interpersonal function on the basis of the importance of signaling relationships between discourse participants; and in recognition of the crucial role that thematic development plays in essay-writing; and Theme was selected to represent the textual function of language.

Text analysis procedure

The discourse analyses were aimed at describing in detail students' abilities to handle key aspects of meaning-making in academic texts, and particularly the role of a visible pedagogy in acquiring these abilities over time.

First, the pre- and posttest essays of all the students taking part in the respective interventions were tagged electronically for Logical Ideation and Appraisal, using literature-based sets of categories and subcategories (compare tables 1 and 2 below). Concordance lists were compiled for both these dimensions and their subcategories, using WordsmithTools version 4.0. Thematic development was determined via a Theme analysis on the pre- and posttest essays of only one respondent in each group to determine whether a significant difference between pre- and posttest scores was supported by a comparable mastery of thematic development. This analysis procedure was used instead of tagging, since thematic development operates at levels above that of the word, *viz.* the level of the clause, paragraph and whole text. Next, the analyses for each of the three selected textual features will be discussed.

Ideational analysis

The ideational function of language does not only deal with construing participants, processes and circumstances that populate human experience, but also with construing experience as logically organised sequences of activities. This aspect of ideational meaning will be referred to as Logical Ideation. Following Martin and Rose (2007) Logical Ideation was broken down into secondary categories: Addition, Comparison, Causation and Time as well as further subcategories. Along with Coffin (2006) it is believed that logical relations are not only expressed by means of conjunctions, and thus the notion of Logical Ideation cuts across grammatical categories. Compare, for instance, the following resources for expressing cause and effect: *because* (conjunction); the *cause(s) of X* (prepositional phrase); *the result* was (noun phrase), X was *caused* by Y (verb), *hence, consequently* (adverbs). Table 1 gives an overview of the main categories of Logical Ideation, and lists a number of prototypical examples:

Table 3 Categories of Logical Ideation

Categories	Subcategories	Examples
Addition	Additive	and; besides; in addition; not only but also; namely for example; such as; as well as; besides; further;
	Subtractive	neither ... nor
	Alternative	or; if not ... then; alternatively
Comparison	Similar	like; as if; similarly; likewise; in the same way
	Contrast	but; yet; whereas; on the other hand; although; while; instead; even though; however; rather
Consequence	Result/consequence	therefore; thus; consequently; so; hence; resulted in; as a result of; the effect of; the consequence(s) of
	Cause	because (of); since; as; due to; for; with; enable; cause; reasons for; causes of
	Means	by; by means of; through; with the help of
	Purpose	so as; in order to; lest; for fear of; toward, the aim of
	Condition	if; provided that; unless
Time	Temporal setting	1913 (as a metonymy for an event that took place in 1913); in 1913; at the onset of the Smallpox Epidemic; towards the end of the Great Trek; at the same time; by 2008
	Temporal process	culminated; concluded; ended; started; at the beginning of
	Temporal sequence	then; after; subsequently; before; previously; again; as; while; meanwhile; the following; the previous
	Text-internal time	Firstly; secondly; first; second; the first reason ...
	Temporal duration	for; continue (to) + V
	Temporal mood	still; yet
	Tense	

A problem that precipitated during the research was that the logical organisation of activity sequences is not restricted to the ideational function of language. One side of the system of logical organisation does indeed interact with the ideational function, but the other side interacts with the textual function: Certain logical relationships are text-internal (having to do with the organization of information in the text itself). A subcategory that serves only a text-internal function is Text-internal Time. Many conjunctions and adverbs have internal (textual) functions in addition to their external (experiential) functions, for example *later*, *earlier*, *meanwhile*, *subsequently*, *towards*,

further, etc. In SFL literature the text-internal uses are often referred to as 'grammatical metaphor' (compare Martin & Rose, 2007). Other authors classify text-internal logic as 'metadiscourse' (compare Hyland, 2006; 2009). This dual functionality of logical markers seems to support Bruce (2008) in his scepticism about the appropriateness of the SFL distinction between field, tenor and mode for "extended, written, monologic" texts, such as academic essays.

For the purpose of the present research no distinction was made between text-external and text-internal uses. This was a conscious decision, because in subject-fields such as History the relationships between real-world events and entities are just as important as those between different elements of the text.

Interpersonal analysis (Appraisal)

The interpersonal function of language was addressed by the Appraisal framework in SFL. The subcategories listed in Table 3 were condensed from Martin and White (2005) for the analysis:

Table 4 Appraisal categories

Categories	Subcategories	Examples
Attitude	Affect/emotion (appraising experience in affectual terms)	(contributed to) discontent and anger; more of angered misery than rage; disappointing; (expressed their) bitterness; (it is) sad (to see); (fills the reader with) revulsion; gory image;
	Judgement (attitudes to people and the way they behave)	(X displayed) genuine sympathy; fearless traitor; corrupt officials
	Social valuation (evaluation of objects, institutions and structures)	repressive (laws); viewed as inferior; cruel world; degrading (conditions); victim of teenage pregnancy; riddled with corruption
Engagement	Attribute (attribute what is being/ has been said to another author)	According to; (Author X) supports; (Author X) argues; X has firmly stated; X implies that
	Proclaim (express the writer's own point of view)	This essay attempts; It is important to note; The truth of the matter is; In other words; Clearly, ...; X can be regarded ...;
Graduation	Force (intensifying/mitigating)	devastating threats; huge disparity; strikingly visible; a major role; extreme vulnerability; very rarely
	Focus (sharpening or blurring reference points)	... in particular; the root cause; more or less; just enough; around X%

Although agreeing or disagreeing with others or expressing one's own commitment toward a proposition in relative measures ('modalising') constitutes an important dimension of Engagement, it was not included as a subcategory because of the regular integration with authorial stance (Proclaim) and reporting (Attribute), e.g. "one should agree", "this report suggests", and "[Author X] seems to argue". Similarly, Disclaiming was excluded as a subcategory of Engagement, since disagreement is also entangled with authorial stance. Furthermore, few second-year students have the confidence and assertiveness to disagree with expert sources, and no examples were found in the students' work.

Textual analysis (thematic analysis)

To keep readers informed about where they are and where they are going in the text, the writer needs to organise experiential and interpersonal meanings into a linear and coherent whole (Butt *et al.*, 2000). This is known as the textual function of language. One of the most important instantiations of the textual function is information flow, also known as 'periodicity' (Martin & Rose, 2007, following Pike 1982). Martin and Rose conflate the traditional dichotomies of Theme and Rheme, which is a speaker-centred distinction, and Given and New, which is a hearer-centred distinction, into one dichotomy, *viz* Theme and New. Martin and Rose (2007) developed a hierarchy of periodicity, starting with the clause level (Theme and New), moving on to the paragraph (hyperTheme and hyperNew), and finally to the whole text (macroTheme and macroNew). I shall start my brief overview with the clause level: Theme and New.

Theme and New

The Theme is the signpost for a speaker or writer's point of departure in each clause, and New is the part of the message that the writer considers interesting or important. In a typical clause the Theme includes everything up to and including the participant that functions as the Subject of the clause. At the other end of the clause is the New, which includes the information the writer is expanding upon as the text unfolds. Compare the following example (the theme is underlined):

Segregation affected the social and economic situation of black South Africans in multiple ways, ranging from underdevelopment to social cohesion.

There are, of course, many clauses with atypical or marked themes, where the clause would begin with circumstantial elements such as places or times, or even participants that are not the Subject of the clause, e.g.

Under the Union government the land Parliament passed the Natives land Act.

In order to assist the reader in following the development of the text, the writer uses two mechanisms:

- (a) Elements from the New of one clause are placed into the Theme of the next.
- (b) Meanings from the Theme of one clause are repeated in the Theme of the next clause.

Compare the following examples:

- (a) Many people experience poverty.

This, in many cases, is due to the non-availability of jobs.

- (b) The dehumanization of people is a concept that not only relates to the treatment
↑
of the poor by the rich.

It is also about how (poor) people treat their social equals.

The closer the thematic links are between clauses, the easier it is for readers to follow the development of the argument.

HyperTheme and hyperNew

HyperThemes predict what each paragraph of discourse will be about. In traditional composition teaching the hyperTheme was called the 'topic sentence', which is then 'developed' in the rest of the paragraph (Martin & Rose, 2007). If the New information is condensed in a concluding sentence (at the end of the paragraph), it is called a hyperNew. Compare the following example from the posttest essays of a student in the cross-disciplinary group:

However, despite the efforts of the affluent, it is imperative for the poor to do
what they can to improve their individual and societal circumstances [sic]

[hyperTheme]. They need to this, not because their contributions would help, but

mainly because, when the affluent succeed in delivering them, they should be used to hard work and persistence. Only then will they be able to sustain themselves when they have been set free from poverty, to continue developing and to help those still left in poverty [hyperNew].

MacroTheme and macroNew

MacroThemes are higher level themes that predict hyperThemes. In academic essays the thesis statement typically functions as the macroTheme. The part of the concluding paragraph that embodies the final conclusion reached by the writer on the basis of the exposition following the thesis statement is the macroNew. The following introductory and concluding paragraphs from one of the posttest essays in the History group exemplify these notions:

Segregation (1934-1948) had a very negative effect on black South Africans. Through a series of laws and regulations it resulted in black urbanization, squatting, and so forth, which are only a few examples of the consequences of segregation on the blacks [macroTheme].

[...]

Through these paragraphs we can clearly see that black people were negatively affected by segregation: socially and economically. Socially because they couldn't live in better, bigger houses in better neighbourhoods and couldn't do high-class jobs. Economically because of the work reservations. Black people could only do hard labour and "low-class" jobs which didn't pay well. [...] Also, as a result of oppressing laws black people were always going to be regarded inferior to whites [macroNew].

For the purpose of the discourse analysis the focus was set on waves of known and new information at the clause level: Theme and New. Because of the labour intensiveness of such analyses, and supported by the generally consistent improvement between the pretests and the posttests of both intervention groups on the dimension of Structure and Development (15% improvement in the case of the cross-disciplinary group and 20% in the case of the subject-specific group), it was decided to analyse only the pre- and posttest essays of Respondent 1 in each group. The procedure described by Butt *et al.* (2000) was followed for the analyses: First, each essay was divided into clauses. Thematic progression was then traced by marking each transition in terms of the type of

bond and its relative strength. The following types of bonds were distinguished: strong bonds to directly preceding Theme; strong bonds to directly preceding New; strong bonds to earlier Theme; strong bonds to earlier New; weak bonds to directly preceding Theme; weak bonds to earlier Theme; weak bonds to directly preceding New; weak bonds to earlier New; absent bonds (no bonds at all).

Discussion of findings

Logical Ideation

Figure 1 shows the difference in how the History students handled logical relationships in their essays before and after the intervention. For each subcategory (Addition, Comparison, Causation and Time/tense) both the number of correct usages and the number of incorrect usages are indicated. This was deemed necessary because the researcher was not only interested in how many times students used a particular resource, but also in how many times the use was appropriate.

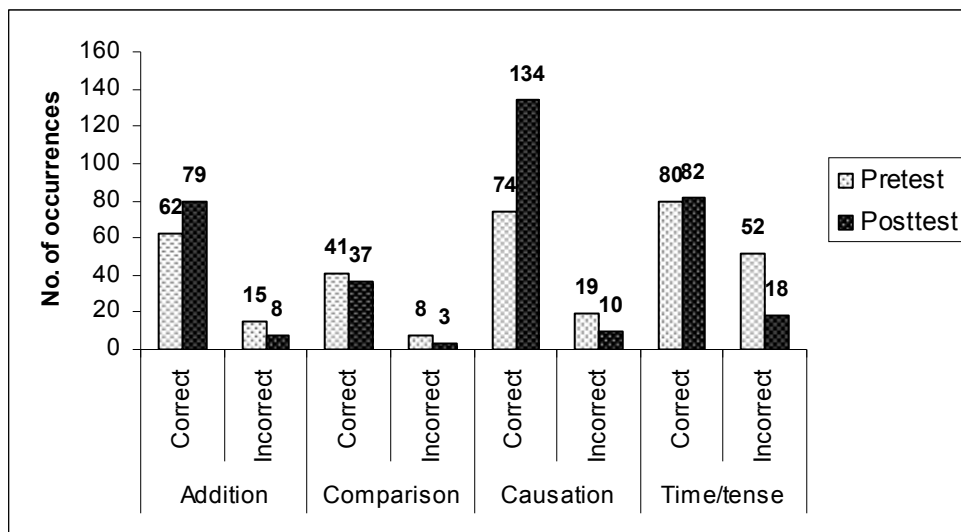


Figure 1 Logical Ideation: comparison of pre- and posttest result in the subject-specific intervention

According to Figure 1 the most significant increase in the number of appropriately used markers of logical relationships occurred in the Causation category, which includes the subcategories Consequence/result, Cause, Means, Purpose and Condition. A moderate improvement was found in the Addition category (from 62 to 79 = 27%), and a slight improvement in the Time/Tense category. Temporal Setting and Temporal Sequence

were mastered fairly well, even at the time when the pretest was taken, and little improvement took place between the tests. However, the number of tense errors decreased dramatically (from 43 in the pretest to 12 in the posttest = 72%). A possible explanation is that the History students had never been explicitly taught how to handle tense in historical writing (personal communication with the lecturer). It is likely that the explicit instruction and continuous feedback during the intervention assisted them in internalising the system.

Figure 2 represents the summarised results of the ideation analysis for the cross-disciplinary group:

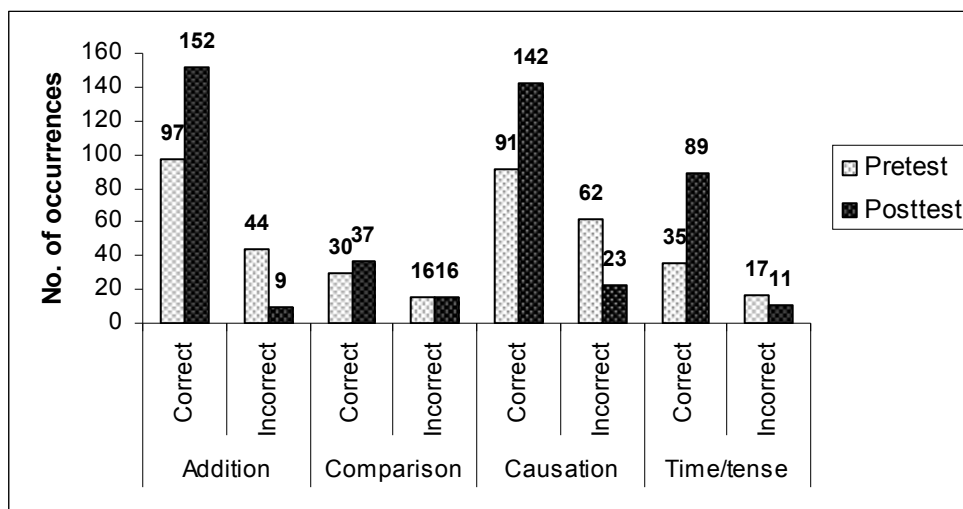


Figure 2 Logical Ideation: comparison of pre- and posttest result in the cross-disciplinary intervention

Analogous to the subject-specific intervention, Causation and Addition were handled well, and errors decreased significantly in this category (an 80% decrease in Causation errors and a 60% decrease in Addition errors). Also, more variety occurred in the students' use of causation resources in the posttest: In addition to the subcategories Cause and Consequence, also Condition, Means and Purpose featured prominently in the posttest. Similar to the subject-specific intervention, Temporal Relations and Tense were handled well by the cross-disciplinary intervention students in both the pretest and the posttest, but in contrast to the subject-specific intervention students (whose pretests contained many tense errors) the cross-disciplinary intervention students committed very few tense errors, even in their pretest essays. Only one tense error was recorded in the pretests and two in the posttests. This might be explained by the fact that in humanities disciplines other than history time does not play such a crucial role.

The category Logical Ideation probably coincides with rubric item 10 Linking Devices. In light of the non-systematic improvement of the two groups on the discourse analysis in terms of their ability to signal conceptual relationships lexically, it is not surprising that difference between the two groups on this item was below 0.05 ($p = 0.1$ on the Wilcoxon signed-rank test - Williams, Sweeney & Anderson, 2009), and thus not significant. A larger sample may have produced more conclusive results.

Appraisal

Figure 3 shows the differences in the subject-specific group's handling of Appraisal resources between the pretest and the posttest.

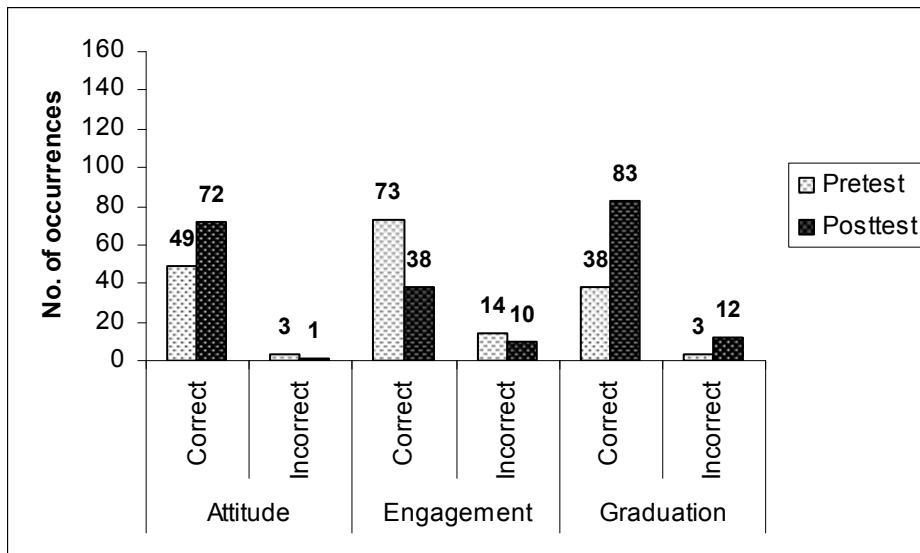


Figure 3 Appraisal: comparison of pre- and posttest result in the subject-specific intervention

According to the graph the History students did not improve consistently in their use of Appraisal resources. They showed the most marked increase (47%) in the Attitude category, which includes the subcategories Emotion, Judgment and Social Valuation. This may be ascribed to their increased content knowledge, and thus their confidence in evaluating historical figures, institutions and events. The category of Engagement produced disappointing results, in that there was an overall decline from 73 to 38 correct usages. This was mostly due to a decline in the number of Attribution markers (from 44 to 13). The only plausible explanation is that an increase in students' subject-field knowledge – resulting from attending lectures, reading, studying and intensive

writing on the history of segregation in South Africa – made them less dependent on sources when writing the posttest essay.

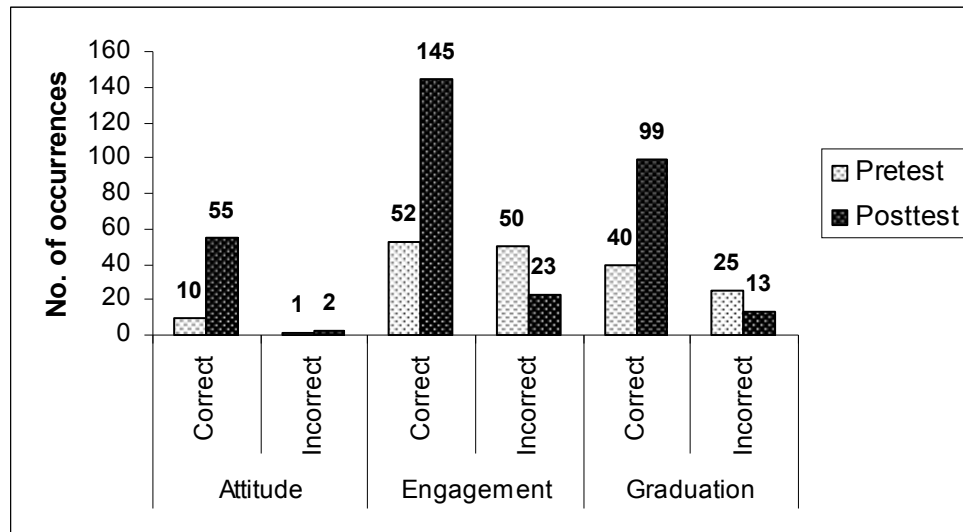


Figure 4 Appraisal: comparison of pre- and posttest result in the cross-disciplinary intervention

Figure 4 shows that on all three dimensions separately, the cross-disciplinary group showed significant improvements: On the Attitude dimension there was an increase from 10 to 55 (= 450%); the number of Engagement markers increased from 52 to 145 (= 173%); and the number of Graduation markers increased from 40 to 99 (= 148%). The steep increase in the use of Engagement markers (Attribution, from 19 to 55 and Proclamation, from 33 to 94) stands in contrast to the decrease in the subject-specific intervention, but is not completely surprising when compared with the statistically analysed results of the analytic scoring: According to the Wilcoxon signed-rank test (Williams, Sweeney & Anderson, 2009) the p-value on Item 3 Stance and Engagement, was not significant ($p = 0.074$) for the subject-specific group, whereas it was significant for the cross-disciplinary group (0.016).

The steep increase in the number of Engagement markers in the posttest could possibly be ascribed to the lecturer *cum* researcher's emphasis on the importance of entering into debate with other authors. Even with 14% error on the posttest, it still proves worthwhile to teach students strategies of Engagement. It is particularly encouraging that only 38 incorrect or inappropriate usages of any of the Appraisal resources occurred in the posttest.

Thematic analysis

The pre- and posttest essays of two respondents from the subject-specific and the cross-disciplinary interventions (Respondent S1 and Respondent C1) were selected to analyze thematic progression. In both essays an improved capability to handle thematic progression was predicted on the basis of the sizeable difference between the respondents' analytic scores on the pretest and the posttest: Respondent S1's overall score improved from 37% to 69%, and Respondent C1's score improved from 60% to 81%. Further predictors of improvement were the two respondents' scores on the dimension Structure and development of the scoring rubric, particularly on item 7 (Paragraph development). Respondent S1 scored 2 on the 7-point scale in the pretest, and 5 in the posttest, whereas Respondent C1 scored 3 in the pretest and 6 in the posttest. Although the overall difference between S1's pre- and posttest scores (28%) was more impressive than the difference between C1's scores (21%), C1's scores fell into a higher bracket than those of S1, and thus it could be expected that the percentage of strong thematic bonds in C1's essays would also fall into a higher bracket than the number of strong bonds in S1's essays.

This prediction was borne out by the findings: In S1's essays the number of strong bonds (in relation to the number of weak and absent bonds as percentages of the total number of clauses) increased from 38% to 76%, whereas the number of strong bonds in the C1's essays increased from 53% to 93%. Conversely, the number of weak and absent bonds in S1's essays decreased from 62% to 23% and in C1's essays from 42% to 8%.

These findings, which signify an impressive improvement on the subject-specific as well the cross-disciplinary intervention, support the statistical findings on the analytic scoring exercise. According to the Wilcoxon signed-rank test (Williams, Sweeney & Anderson, 2009) the p-values for Item 7 Paragraph Development were 0.004 for the subject-specific group and 0.003 for the cross-disciplinary group, which means that the improvement, in both cases, was statistically significant.

Conclusion

Although no grand generalizations can be made on the basis of the quasi-comparisons of the students' use of key meaning making devices that have been described in this

article, both the subject-specific and the cross-disciplinary interventions seem to have afforded students tools and mechanisms to improve their academic writing. Both groups responded well to explicit teaching of Structure and Development, which was strongly emphasised in both interventions.

Differences in the achievement of the two groups, as demonstrated by both the conceptual and the quantitative analysis, do not seem to be only related to the focus (wide or narrow) of the particular intervention. Teaching strategies, amount of exercise, and overt emphasis of particular meaning-making resources also seemed to impact on the amount of learning that took place. For instance, as a result of more intensive and extensive engagement with authentic scholarly materials the students who took part in the subject-specific intervention showed a more sizeable improvement in terms of handling sources in their written work. However, as they became less reliant on sources in terms of displaying content knowledge, they tended to naturalise facts, and their use of stance and engagement markers decreased. In contrast, the students in the cross-disciplinary group acquired a more marked command of stance and engagement than their subject-specific counterparts. This could have resulted from their continued reliance on source materials when writing the in-class essays, but it is even more likely that their acquisition of a more varied repertoire of stance and engagement markers as well as cohesive devices resulted from the lecturer's intensified focus in the cross-disciplinary module (which was presented in the semester following the subject-specific intervention) on the use of these lexicogrammatical devices. In other words it is likely that the learning effect could have resulted from what the course designer had learned from her experiences during the subject-specific intervention, and applied consciously or sub-consciously during the cross-disciplinary intervention.

In sum, it seems that explicit and systematic teaching of functional-grammatical characteristics of academic texts does pay, irrespective of the 'width' of the disciplinary focus. Furthermore, the discourse analysis revealed areas of improvement in both groups that had been masked by the more impressionistic procedure followed during the analytic scoring. If this inference is merited, it underscores the value of linguistic analysis for pedagogical purposes.

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