An Approach to Teaching the Writing of Literature Reviews

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Abstract

Students face difficulties in writing literature reviews that relate in particular to limited knowledge of the genre (Bruce, 1992; E. Turner, 2005). While there has been valuable research relating to genre and discourse analysis of the literature review (such as Bunton, 2002; Kwan, 2006; O’Connell and Jin, 2001), there is a lack of research into the effectiveness of published writing support programmes. Furthermore, with exceptions such as Ridley (2000) and Swales and Lindemann (2002), there is little explicit advice on how to approach the teaching of the literature review. This paper reports on one of two studies described at the 4th International EATAW conference 2007. It describes an evaluation of the effectiveness of an approach at a New Zealand university to teaching the writing of literature reviews. It focuses on a 15-hour unit of teaching as part of a six-day EAL graduate writing course. The study found clear evidence of improvement in all areas that were targeted.

Introduction

Taught papers in graduate diploma and postgraduate programmes often include literature review assignments, and these have even emerged as a form of written assessment at undergraduate level in some disciplines (Turner, 2005). The literature review is an important sub-genre of postgraduate research proposals, dissertations and theses, and also is a significant research genre in its own right (Cooper, 1988). However, reviewing the literature presents special challenges, particularly for EAL (English as an Additional Language) students. Writing a literature review involves a synthesis of a complex range of analytical and rhetorical skills as well as academic writing skills, and an understanding of what is meant by critical analysis and argument. In the authors’ experience of teaching writing support programmes at both graduate and postgraduate levels, while some EAL students are able to give a fairly accurate summary of the functions of a literature review, not one has been able to explain the concept of argument in the context of academic genres, even though this term is frequently used. It needs to be recognised, however, that different perceptions of the meaning of argument stem from different cultural, linguistic and educational traditions with different priorities in terms of what is valued in academic texts (Canagarajah, 1996).

A summary of relevant graduate and postgraduate student needs includes, in general terms: an awareness of the rhetorical and linguistic conventions of relevant texts (Dudley-Evans, 1995), critical thinking skills (Zhu, 2004) and the ability to synthesise information from multiple sources (Carson, 2001; Zhu, 2004), along
with summarising, paraphrasing and citation skills. More specifically related to the literature review, Carson (2001) identifies the need for students to be able to meet the cognitive demands posed by the critical review assignment and to organise a coherent analysis, while Allison, Cooley, Lewkowicz and Nunan (1998) point out the need to be able to sustain an argument over an extended text. Based on the present authors’ teaching experience, our premise is firstly that students need to be able to understand what is meant by argument in this context and secondly, that the ability to construct a coherent and cohesive argument over the length of a short text is a prerequisite for constructing an extended argument over a longer text.

This paper summarises a study that sought to evaluate the effectiveness of an approach to teaching the writing of a short literature review. The aim was to investigate the extent to which graduate EAL students were able to produce a coherent and logically-structured argument in a short literature review at the end of a 15-hour unit of teaching. The paper summarises relevant literature, provides details including a summary of the teaching approach, the study design, and the focus of features of analysis, and provides a discussion of key findings. The final section outlines the limitations and conclusions.

**Literature Review**

*Student difficulties and published advice*

There has been considerable research into sentence and paragraph level difficulties encountered by graduate EAL students (for example, Bitchener and Basturkmen, 2006; Cooley and Lewkowicz, 1997; Dong, 1998; Hinkel, 2003; James, 1993). Other difficulties relate to restricted rhetorical and genre knowledge, as well as limited understanding of content parameters of different sections of a thesis, and difficulties in sequencing and developing an argument coherently (Bitchener and Basturkmen, 2006; Cadman, 1997; Casanave and Hubbard, 1992). More specifically, Bruce (1992), Turner (2005) and Bitchener and Banda (2007) have identified low levels of student understanding of the functions of a literature review and of its characteristics. There is published advice on academic writing. However, texts tend to make assumptions about students' knowledge and understanding of the functions and features of a literature review (Paltridge, 2002), or employ analogies that are either complex (Krathwohl and Smith, 2005) or that tend to be culturally-specific to those who use English as a first language (Kamler and Thomson, 2006). Swales and Lindemann (2002) also point out that there is a division in currently available material between a focus on generalities, including some possible ways of organizing a review, and specifics such as choice of reporting verbs, tense use, and forms of citation. At issue is how student writers can be inducted into the analytical processes by which they learn to bridge the ground between these macro and micro levels of research and advice.

*Support programmes*

Institutional support for students writing at this level is provided in a variety of ways, including seminars, workshops (Sachtleben, Strauss, and Turner, 2007; Woodward-Kron, 2002), and credit-bearing, taught writing courses. Discussions of five EAL graduate writing programmes have been published by Allison, Cooley, Lewkowicz and Nunan (1998), Dudley-Evans (1995), Frodesen (1995), Richards (1988) and Silva, Reichelt and Lax-Farr (1994). A variety of approaches are described, with Dudley-Evans’ description of the programme at the University of Birmingham providing information on content that might be considered for an approach to teaching the writing of literature reviews. A further and interesting report describes an approach related specifically to teaching the writing of literature reviews on a dissertation and prospectus writing course (Swales and Lindemann, 2002). This includes materials used and examples of the ways in which students from a variety of disciplinary backgrounds organized information in a short text. However, while three of the programmes were evaluated by the teachers and students, none of the six reports mentions any attempt to measure the effectiveness of what was offered in the course of study. There appears to be a significant gap in the published literature regarding attempts that might have been made to evaluate the effectiveness of programmes.

*Argument*

The construction of a logical argument is central to an effective literature review, and can be defined as the logical sequencing of propositions, or a logical process of reasoning, which is realised in the relationships between propositions. James’ discussion (1993) is relevant and focuses on the global organisation of external propositions that are categorised either as superordinate or subordinate (see below). In her genre
analysis of the rhetorical structure of thematic units in Ph.D. thesis literature review chapters, Kwan (2006) investigates the structure of rhetorical argument, at the level of rhetorical moves, steps or strategies. The notion of moves and strategies reflects, at different levels, the rhetorical purpose of sections of text. Kwan identifies three categories of unit: introductory texts; thematic units with a predominant recursive arrangement of Move 1 (Establishing a territory, or relevant themes) and 2 (Establishing a niche) (see CARS model in Bunton, 2002; Swales, 1990); and thirdly concluding texts. Also relevant to argument, rhetorical structure theory (Mann and Thompson, 1983, 1986) centres on the idea that text coherence is dependent on rhetorical relations between units of text, which at a micro level can be analysed in terms of structural organisation. Accordingly, rhetorical relations are defined in terms of the effect the writer intends by juxtaposing units of text, where the minimal unit of organisation is the clause; these relations are described as independent of linguistic devices, such as conjunctions, that may be used to signal them. However, Hyland and Tse (2004) point out that metadiscourse, including conjunction, plays a significant role in the coherent construction of both propositional and interpersonal elements, and also point out the ideational function that conjunction can fulfil in signalling the writer’s perception of the relationships between ideas. Thus, argument, in the context of the literature review, involves not only the identification of global relationships in <external> propositional content, and the organisation of propositions within thematic units, but also the logical juxtaposition of units of text, as well as the use of metadiscourse that makes explicit the relationships between these. A coherent argument in a literature review, therefore, is dependent on the successful organization and integration of <external> propositional content and effective metadiscourse.

Introduction to the Study

While research has identified student difficulties in writing literature reviews and in developing a coherent extended argument, as well as students’ lack of relevant genre and discourse knowledge, the literature suggests that there is a need to evaluate the effectiveness of teaching approaches in this area. The present authors’ focus was on bridging some of the gap between genre and discourse analysis research and teaching methodology, particularly in terms of the analytical and discourse skills required to achieve logical and explicit relationships between ideas in the development of argument in a short literature review. The study focuses on a 15-hour unit of teaching as part of a 6-day (36-hour) graduate writing course. The course is offered as a Summer School paper with three (alternate) days in one week, followed by a four-week break, and then a further three days. The unit of teaching and learning related to the literature review takes place over the first three days. Teaching and learning activities are summarized in Table 1. (The course also covers analysis of examples of discipline-specific assessment instructions and requirements, writing summaries and critiques, and reflective writing.)

As Table 1 indicates, the majority of classroom work was based on either paired or group activities. Discipline-specific texts were provided for analysis on Day 1 by the lecturer (the first author). Thereafter students were asked to bring their own choice of relevant texts. The analysis of rhetorical moves, steps or strategies in introductory sections of research articles on Day One was preceded by a brief explanation and summary of approaches to genre and discourse analysis provided by the lecturer. Otherwise students were required to explore together the rhetorical structure of discipline-related texts by applying the research findings (Bunton, 2002; Swales, 1990; Kwan, 2006) summarised on the handout. The group exercise on Day Two was an adapted form of Swales and Feak’s Reviewing the Literature task (2004, pp. 251-253). This involves the organization of given information, in the form of six paraphrased quotations from the literature, and the writing of a short literature review. Students were not, however, provided with any form of introduction or any suggestions as to how information might be categorised.

To measure the effectiveness of the teaching approach taken, the study included a pre-test, treatment, post-test design (Mackey and Gass, 2005). We measured each student’s level of knowledge and skill before teaching and learning took place, and repeated the same form of measurement on a similar post-instructional task. To ensure that any improvement was the result of teaching and learning activities, an immediate post-test was carried out and a later delayed post-test was conducted to measure levels of retention. Thus it was possible to compare each student’s first attempt at writing a short literature review with other attempts at the same task-type, and to determine whether and the extent to which progress had been achieved.
<table>
<thead>
<tr>
<th>Day</th>
<th>Topic area</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Introduction to literature reviews (LR)</td>
<td>• definition of LR; discussion&lt;br&gt; • text types that include a L.R.&lt;br&gt; • Discussion of meanings of critical analysis; logical argument&lt;br&gt; • Exercise in pairs: reorganising sub-section headings of L.R. in student dissertation to create logical argument&lt;br&gt; • Exercise in groups: analysis of structure of discipline-specific research articles (RAs).&lt;br&gt; • Concept of genre&lt;br&gt; • Exercise in groups: analysis of rhetorical moves, steps/strategies in introductory sections of same RAs. [handout summarising Bunton 2002; Swales, 1990; and Kwan, 2006]&lt;br&gt; • Critique of Introduction to LR section of S dissertation; features of advance organiser</td>
</tr>
<tr>
<td>Two</td>
<td>Recap on function of L.R.; concept of argument; rhetorical structure of RA</td>
<td>Discourse analysis: linguistic characteristics and features of RA sections&lt;br&gt; Citations in LRs; patterns of citation; tense use; features APA system and relationship to reference list&lt;br&gt; • Exercise in pairs: matching extracts from discipline-specific RAs to rhetorical sections [Introduction, Method, Results, Discussion]; analysis and discussion of key linguistic features&lt;br&gt; • Exercise in pairs: analysis of citation patterns in discipline-specific LRs: integral/non-integral forms and rationale for usage; direct/indirect quotations; tense use in reporting verbs&lt;br&gt; • Checklist for writing LRs: concept, functions, writing process, organisation of argument&lt;br&gt; • Group exercise: writing a short LR (adapted from Swales and Feak, 2004). Focus on writing advance organiser; organisation of argument; explicit metadiscourse links</td>
</tr>
<tr>
<td>Three</td>
<td>Feedback on group LRs</td>
<td>Paraphrasing the literature: rationale for paraphrasing; key options- synonyms, word order, word form&lt;br&gt; • Critique of group texts and error correction exercise: focus on introductions, conclusions, argument and linking of ideas; accuracy of language; vocabulary choices&lt;br&gt; • Written feedback on group texts; optional re-write; handout on linking words and phrases&lt;br&gt; • Exercise in pairs: paraphrasing extracts from discipline-specific texts&lt;br&gt; • Analysis of meaning of reporting verbs</td>
</tr>
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</table>
The initial pre-test required students to write a short literature review of less than 500 words, equating to a single thematic unit and relating to descriptions of culture (see Appendix 1). This assessment was followed by a questionnaire which investigated students’ background details, their previous experience of writing a literature review and their understanding of its functions, organisation and linguistic features. The in-class immediate post-test administered at the end of Day 3 also performed a role as the first, assessed draft of Assessment One on the course. Extracts from the literature provided for students related to citation practices in academic texts. Students received written feedback on this as well as an individual tutorial before submitting a second revised draft. Extracts provided in the final delayed test instrument at the beginning of Day 4, one month later, related to the definition, features and purposes of literature reviews. The number of extracts ranged from 5 to 11 across the tests and varied from 1 to 3 sentences in length.

Ethics approval was received for the study, and students who participated provided informed consent to do so. All eight enrolled students consented to participate. Participants were three international Indian students on a bridging programme for the Master of Health Science, and 5 international Bachelor of Business students in their 3rd year from China, Hong Kong and Thailand.

Text analysis
A total of 31 texts were analysed – 8 pre-tests, 8 first drafts of the immediate post-test, 8 revised drafts which were submitted after written feed back and tutorials, and 7 delayed post-tests. Average text length increased across the tests, from 7 sentences in the pre-test texts to 14 in the immediate post-tests, and 17 in both the revised immediate post-tests and the delayed post-test texts. The focus of analysis of these texts was developed in response to the most significant difficulties. These included:

- the absence of a suitable introductory segment or inaccurate introduction
- problems with overall or global organisation indicating inadequate analysis of key sub-themes or main ideas and their relationships
- illogical position of sentence-based propositions or juxtaposition of units of meaning within sentences (local organisation), even when the global organisation might be acceptable
- and absence of or inaccurate use of metadiscourse or cohesive devices that express organisation or semantic relations (cohesion)

Descriptors for each feature were produced for each set of test texts (see Turner and Bitchener, 2006). These allowed for variations in students’ approaches to global and local organisation (Swales and Lindemann, 2002). Texts were then analysed according to these descriptors and criteria. For the first two features texts were evaluated according to whether or not they met the descriptor criteria. For local organisation and cohesion, analysis was in terms of frequency, expressed as percentages. These reflect respectively for each text: the ratio of the number of logically-positioned sentences to the total number of sentences; the ratio of logically-positioned units of meaning to the total number of these; and the ratio of cohesive devices that express accurate or logical relationships to the total number of cohesive devices.

Student texts were analysed by the first author. The second author conducted an independent inter-rater reliability check on 25% of the texts. The findings of both were then compared. Where differences occurred, a conjoint re-assessment of the item(s) or features(s) was carried out until agreement was reached.

Texts were parsed in terms of single units of meaning’ (SUMs), rather than adopting the T-unit based on the independent clause as the unit of analysis (J. Richards, Platt, and Platt, 1992). In our analysis, we found that separate propositional or metadiscourse meaning could be included in forms other than clauses. As an example, Student 2 wrote the following sentence in the pre-test: «[Culture] is shared by all the members of a group [SUM 1] and transmitted from one generation to another [SUM 2] enabling them to learn things the right way [SUM 3].» Each unit carrying propositional meaning comes from a separate extract in the pre-test – d, a, and c, respectively (see Appendix 1). While the first two units can be described as clauses, the third is not an independent clause but is capable of being one.

Findings and discussion
Responses to the questionnaire at the outset of the course revealed limited knowledge of the literature review. Three students had previous experience in writing a literature review as a sub genre; two were able to give an adequate definition of a literature review. None was able to identify any organisational or
structural features, and in terms of language features, one student suggested that reviews were «written in past tense, chronological order», and a second referred to «referencing [...] many authors».

Table 2 summarises the analysis of the student texts across the three tests. It includes the resubmitted immediate post-test texts, which were revised after written feedback and tutorials, as this represents part of the evaluated teaching approach. The fact that these texts were revised explains why the results for some features are higher than those for the delayed post-test.

Students’ limited previous experience with writing literature reviews and low levels of genre knowledge were reflected in the responses to the pre-test. Only four included an adequate introduction. This suggests for half of the students a lack of ability to analyse and identify the main theme of the text, or a lack of awareness of the expectation that academic texts will prereveal the main theme or topic (Kwan, 2006; Johns, 1997). Three of these same students also cited the given literature, as did a further student, with citations predominantly in the form of direct quotations. One student listed five numbered points, which either broadly interpreted and extended the meaning of the given extracts or offered identifying information that could act as an appropriate organising proposition or theme for the text as a whole (James, 1993). The mean frequency for the logical position of individual sentences within the overall organisation also improved

<table>
<thead>
<tr>
<th>Feature*</th>
<th>Pre-test</th>
<th>Immediate post-test</th>
<th>Revised Immediate post-test</th>
<th>Delayed post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. suitable Introduction</td>
<td>YES 4</td>
<td>YES 6</td>
<td>YES 7</td>
<td>YES 7</td>
</tr>
<tr>
<td></td>
<td>NO 4</td>
<td>NO 2</td>
<td>NO 1</td>
<td>NO 0</td>
</tr>
<tr>
<td>2. logical global organisation</td>
<td>YES 2</td>
<td>YES 5</td>
<td>YES 7</td>
<td>YES 6</td>
</tr>
<tr>
<td></td>
<td>NO 6</td>
<td>NO 3</td>
<td>NO 1</td>
<td>NO 1</td>
</tr>
<tr>
<td>3. logical position of sentence-based propositions</td>
<td>61.5%</td>
<td>81.7% **</td>
<td>91.5%</td>
<td>79%**</td>
</tr>
<tr>
<td>4. logical juxtaposition of SUMs</td>
<td>76.5%</td>
<td>90.4%</td>
<td>94.5%</td>
<td>93.8%</td>
</tr>
<tr>
<td>5. cohesion</td>
<td>68.1%</td>
<td>83.9%</td>
<td>90.3%</td>
<td>91.4%</td>
</tr>
</tbody>
</table>

* Features 1-2 as frequencies of occurrence; features 3-5 as mean frequencies of logical position, juxtaposition and accurate use of cohesive devices
** Student 2 scored 50%
in the delayed post-test, although this was lower than for the immediate post-test. This latter point may be explained partly by the fact that the number of extracts increased across the three tests, as did the length of extracts. The tests were thus increasingly demanding in terms of the analysis and organisation required. In addition, the overall mean frequencies for the immediate and delayed post-tests were reduced by the results for Student 2, who only achieved a frequency score for this feature of 50% in each. This student was able to construct a logically-organised text in the pre-test, in which he/she used the extracts as a «springboard» for a short text on culture. However, once aware of the need to analyse, paraphrase, integrate and cite information from the extracts in the following tests, the student’s ability to organise sentence-based propositions appeared to diminish. It may be that this student needed more learning time or more time for analysis and text production in the tests than others.

Interestingly, however, logical juxtaposition of single units of meaning within sentences improved considerably across the tests (from 76.5% to approximately 94%), as did the appropriate use of cohesive devices (from 68% to 91%). The learning and teaching activities appear to have increased students’ ability to focus on accurately interpreting the meaning of the extracts, to organise units of meaning logically, and to analyse and explicitly express relationships between units of meaning, as well as between sentence-based propositions, more effectively. The fact that this level of improvement was maintained in the delayed post-test, after a one-month gap, indicates that the role of feedback and tutorial discussions relating to texts produced in the immediate post-test, may be particularly significant.

**Conclusion**

The limitations of this study need to be acknowledged. The generalisability of the findings is restricted by the number of students involved and the limited number of texts available for analysis. It is also important to recognise that the short literature review is not an authentic academic genre, and it needs to be tested whether improvements achieved in structuring an argument in a short text can be transferred to a longer one. The fact that the course described here is limited to six days relates to institutional constraints that are beyond our control. This, coupled with the fact that students were not from a single discipline area, constrained our ability to involve students in the stages of research and reading that would normally be involved in writing a literature review (Swales and Lindemann, 2002).

The decision to focus in the first three days on the issue of argument in a short literature review allowed us, however, to: introduce students to genre and discourse analysis, and to involve them in analysis of the structural, rhetorical and linguistic features of relevant and discipline-related texts; raise students’ awareness of some important features of critical analysis; focus on the features of logical argument and functions of metadiscourse in this context, as well as on skills of paraphrasing, citation and referencing. As Swales and Lindemann point out, such skills are frequently treated separately; in the three days described, these were addressed cohesively in the learning and teaching activities. The group-based activities allowed students for example to discuss and analyse texts in terms of the moves, steps or strategies they could identify (Bunton, 2002; Swales, 1990; Kwan, 2006), and raised their awareness of the fact that texts are structured according to rhetorical purposes and conventions of argument. The group activity based on Swales and Feak’s exercise (2004) involved students in discussion about the meaning of the given information and ways in which this could be categorised and organised, as well as in collaboration in writing the text. Analysis and critique of these texts illustrated the different ways in which an argument could be constructed, as well as providing an opportunity to identify and work on weaknesses in terms of accuracy of meaning, clarity of expression, organisation of argument, suitability of introduction, use of metadiscourse, and citation and referencing forms. The choice of topics for the short literature reviews in the immediate and delayed post-tests – relating to citation practices in academic texts, and the definition, features and purposes of literature reviews, respectively – were selected with the aim of reinforcing the learning activities. In future courses, however, these could be replaced by different topics, particularly if the student cohort came from a single discipline area.

In terms of the focus of evaluation in this study, in identifying features for analysis it was decided not to include students’ ability to cite and reference sources. However, these skills also improved considerably, as did the range and choice of forms of citation and choices of reporting verb. The features that were selected – introduction, global organisation,
positioning of sentence-based propositions and single units of meaning (as opposed to the clause as the unit of analysis), and use of metadiscourse in the form of cohesive devices – provide relevant and useful parameters for measuring improvements in students’ ability to construct a coherent and cohesive argument. The approach to text analysis used in the study has been effective in revealing the level of effectiveness of the teaching approach. It involves the production of detailed descriptors for the first two features as well as quantitative analysis of the positioning of sentence-based propositions, units of meaning and use of cohesive devices. The findings suggest that the learning and teaching approach described, although limited by the 15-hour time frame, does appear to have been successful in achieving significant and measurable improvement in students’ ability to achieve a coherent and cohesive argument in a short literature review. It would be useful to further test the effectiveness of these criteria and this approach to analysis by adopting these in another study involving a larger number of students and texts, and by subsequently applying the same criteria to extended literature review texts produced by the same cohort of students.

Reference List

Elisabeth Turner and John Bitchener: «An Approach to Teaching»


Appendix 1:
Example of test instruments: pre-test

Pre-Test
Using the information provided below, write a short literature review of descriptions of culture. (no more than 500 words).
These are direct quotations from the literature on descriptions of culture:

a. Culture is «the totality of ... learned meanings maintained by a human population, or by identifiable segments of a population, and transmitted from one generation to another»

b. «Any given culture or way of life is learned behaviour which depends upon the environment and not on heredity»

c. «Every person is encultured into a particular culture, learning the ‹right way› of doing things»

d. «Culture is learned and shared by all the members of a group ...»

e. «Many ... think of culture as composed of numerous separable...factors, including subsistence patterns, social and political institutions; languages; rules governing interpersonal relations; divisions of labor by sex, age, or ethnicity; population density; dwelling styles; and more...»
Source: p. 526 of an article written by M.H. Segall called Culture and Behavior: Psychology in Global Perspective; in the journal called Annual Review of Psychology 1986; volume 37, pages 523–564.