

An Approach to Teaching the Production of a Literature review for a Student Research Report

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Abstract. Technical and academic writing is a challenge and generally not a popular activity amongst university students. Writing literature reviews for student research projects is complex, both cognitively and linguistically. It involves a range of skills including critical thinking, problem solving and, of course, appropriate language knowledge. This case study describes an approach designed to make this task more accessible to novice student writers and to permit them to take some ownership of the generative elements of producing the review. Initial student feedback indicates a high level of satisfaction with the approach and resulting grades.

Keywords: literature review, academic, approach, ownership.

Background

The following is a description of what developed into a series of teaching and learning sessions on the production of a basic literature review for an undergraduate student-generated research project and the approach used by the instructor to teach this. The students are freshmen in the second level of a two-part communications programme in the Petroleum Institute in Abu Dhabi. The programme has a team-based, project-based learning dynamic. Average class size is usually 20 students. All students are native Arabic speakers.

The programme focuses on the development of a primary research project culminating in a substantial written recommendations report and a multi-media presentation. Students have already produced a source summary as part of their work on the first level of the course and are now building on that knowledge to produce a basic literature review for their report. This genre is new to them and they could therefore be described as 'novices'. It is, of course, generally accepted that a well-crafted literature review is central to effective research and any paper resulting from this. As stated by Boote & Beile (2005, p.3), "a researcher cannot perform significant research without first understanding the literature in the field." The legitimacy of the literature review is therefore easily established and explained.

The literature review is a challenge for students anywhere and ours are no exception. An additional hurdle for them of, course, is that they are not native

speakers of English (Funderburk-Razo & Hidalgo, 2014) and this factor has influenced that part of the approach which deals purely with language (See app 2).

There are three very commonly used formats for the organization of a literature review; historical, conceptual and methodological (Randolph, 2009, p.4). Levy & Ellis (2009) believe that, “an effective and quality literature review is one that is based upon a concept-centric approach rather than chronological or author-centric approach” (p.184). Since our students are novice researchers with all the problems that implies (Webster & Watson, 2002, Chen, Wang & Lee, 2016) and given the language issue identified above, a conceptual or theme-based approach (see Stage 1 of the approach below) is the most accessible and useful for them. For similar reasons, the review focus leans towards findings through the analysis and synthesis of information contained in the source texts, given that as stated by the Educational Resources Information Center (1982), the literature review can be seen as, “information analysis and synthesis, focusing on findings and not simply bibliographic citations” (p 85). Reference to this particular focus is part of the task description given to the students.

All tasks on our programme have a written task description (See appendix 1). Students are expected to read, discuss and annotate these to develop an understanding of the task before the class. As teachers are aware that not all students may do this, the task descriptions are commonly used as a teaching/learning tool. Obviously there are many possible approaches to this. Described below, is the one used by the writer. The class materials used are displayed in appendices 1 and 2.

A further issue is student ‘ownership’. Writing is not generally a popular activity among university students (Schuman, 2013) so this approach is designed to focus very much on what they can contribute and input at any stage of the production process. For example, right at the start, as a contextualization for the literature review and its development, we use to the topics the students have chosen as a focus for their research and the sub-questions they have generated in their teams, as this will inform the selection of texts they will choose as the basis for the review. Further, students are periodically invited to teach parts of the process in class to their colleagues when they are confident to do so. Thus active student involvement is present from the beginning.

Stage 1

1. Students have selected relevant texts based on the research topic (two for each team member) from academic databases such as EBSCO Host to use as background reading for their research project. These are based on different research themes/concepts/questions and sub-questions which they have developed and will gather data on. They are expected to have read and annotated these out of class and will use them as the focus for the review. Reference is first made to previous experience of like tasks (reflection) and then to what individual and collective understanding students may have of the

current task. This generally tends to be patchy at best. Discussion focuses on where and how the literature review fits within their research report and its importance in this context in order to allow effective conceptualization of the task and lend it a clear purpose and application (Donahue, 2009). Students present their text choices and explain the relevance of their chosen texts to the research question. All team members are expected to screen the texts to be sure they are appropriate. Other students are invited to comment on the apparent relevance of the texts and the teacher gives input and guidance on alternative choices, if texts do not appear to have a high level of relevance. Unlike a more teacher-led classroom activity, students have a high level of input at this stage and are instrumental in setting the context and goals for what follows.

2. The task description (see appendix 1) is then screen- projected and skim read. Students also have hard copy. They are familiar with the purpose and use of task descriptions from previous assignments and the preceding Communications course. Key lexis is focused on and discussed. The purpose here is to establish what students already know (schema) that can be applied to the current task and most of this session is based on student input related to past experience, current understanding, knowledge and reflection. Students take notes and general understanding is reviewed with a Q and A session in which they are encouraged to give a deeper analysis of the text (task), focusing on the highlighted concepts (vocabulary). Italicized text indicates task orientation vocabulary (instructional) and bolded text is the teacher's best guess at what vocabulary may be unfamiliar. Students are encouraged to offer definitions of the latter and identify any other 'problem' vocabulary. They are then asked to comment on grammatical features and these are reviewed, explained and discussed where understanding is not clear (e.g. modality, use of passive, and collocation). An extended Q and A session for clarification and checking then follows. This is a whole-class activity within which students generate and respond to each other's questions. The teacher's role is one of facilitator. As can be seen, there is a strong emphasis on discussion as this can help in providing a firm foundation for the development of literacy skills (Dickenson & Tabors, 2001). Further, the emphasis is on the "exploration of ideas" and knowledge (Cazden, 1988) rather than having students respond to teacher-generated 'comprehension' questions (p. 54).

3. Students are reminded of the importance of paraphrasing in academic writing and prior experience of paraphrasing is elicited and discussed. This focuses on the 'why' and 'how' of this rather complex process. An in-class team exercise is given on paraphrasing the final paragraph of the task description.

These stages usually take two 50- minute class sessions. However there needs to be flexibility with timing given that students or the facilitator may see the need for more time to be spent exploring a particular element or challenge such as the paraphrasing mentioned above. (Ankawi, 2015).

Stage 2

1. In the next class, teams present their paraphrases and discuss the effectiveness and integrity of these. They compare features of their work with the italicized model at the end of the task description (this is not on the original document, but added prior to this stage after the previous class is finished). They then describe the different approaches used to produce the paraphrases and these are discussed and evaluated. This is a student-led activity.

2. We then begin work on building a possible structure for the literature review using a screen- projected 'skeletal' version of the template in appendix 2 (see step 3 below). We take a general to specific approach of the concepts that underpin the organization and content of the document. These are: context (introduction), summary, argument, synthesis, evaluation and conclusion. These terms are discussed in the context of the document the students are required to produce and related to previous documents they have written (experience). Synthesis, argument (Bitchener & Turner, 2006) and evaluation tend to be the most cognitively challenging ideas for the students to grasp and they are unfamiliar tasks. Proportionately more time is therefore spent on exemplifying and clarifying these by identifying them as features of the texts the students have selected themselves. Existing schema and real-world experiences, such as comparing two cars in order to decide which one to buy (information synthesis, evaluation and argument), are also referred to in order to personalize the activity.

The students work in their teams to suggest possible ways to introduce different elements of the content and structure of the review. These are shared and refined with respect to level of formality and stem sentences (see appendix 2) are generated as ways of introducing the informational load (content). Speculative discussion focuses on what information might follow and what language could be used to describe this.

3. Additional language structures are elicited in the same way and added to as shown in the text box in appendix 2. It is important to emphasize that the document displayed here is almost 'complete'. In the first class of stage 2 (step 2 above) it is presented in a very basic and simplified form and is fleshed out as the learning sessions develop with students suggesting language input into the developing document. Based on discussion and negotiation of the relevance and appropriateness of this, it is either included or rejected. This is again, a class decision in which the teacher functions as a facilitator and is designed to optimize both individual and collective (team and class) understanding. We then refine the contributions (as above), particularly with respect to level of formality as students are often able to propose an appropriate chunk of language (in terms of meaning) albeit in an informal style. They take notes and at the end of the third session the 'completed' document is mailed to them to use as a guide and checklist for their review. They then proceed to draft the document (application).

The three steps described above normally take three 50-minute class sessions. The class-based sessions lead to out-of-class follow up as the students apply

new to existing knowledge to continue to work on the document. Repair and development continues to take place back in the classroom and extensive formative feedback is given until the literature review is handed in for grading.

Conclusion

As stated in the introduction, the review is both a cognitive and linguistic challenge for the students. I have found over time that following the described approach has, for many of them, resulted in a demonstrably well-defined understanding of the overall task and its components which allows them to apply research topic-based knowledge and critical thinking (analysis) to the production of the literature review (Bitchener & Turner, 2008). This increases the likelihood of completing the task as required, as well as reducing the possibility of flawed organization. Further, it contributes to a clearer understanding of the concepts (themes) they will focus on in the research.

Students are able to show development and relevant application of a higher frequency of genre - appropriate lexis and the inclusion of a higher level of appropriate content. This is particularly important in our context, given that our students are operating in a foreign language. Task fulfillment, organization, content and language are all assessment categories in the descriptive rubrics we apply for the grading of written assignments. Relative performance in these areas within our programme, are also indicators of evolving critical thinking and language development.

Informal student feedback in discussions after the review was completed, indicated a more developed understanding of the task and more mastery of the specific lexis required to both write and talk convincingly about their background research reading. They could also see that they would be able to apply the language and ideas again in the final research report, both in the extended literature review and the discussion section of the report. Additionally, they stated that they felt more knowledgeable about their research topics and questions. There was a strong feeling that they had been directly involved in the teaching/learning process and thus a higher 'buy in' for the assignment. That student engagement is a foundation for more learner-centered 'teaching' is well established (Fredricks, Blumenfeld & Paris, 2004) and the above statements are a gratifying response from these learners.

It is important to state here that the literature review is not usually a popular assignment with the students, partly because their understanding of its purpose is often not clear. This was not the case in these two classes. Lastly, students were largely satisfied with the grades they received for the review.

As yet there is no detailed data over time to link this approach to grade performance or comparison with grades in other classes as this is not part of the scope in this paper. This might form part of the focus of a future research study on the approach.

The tables below represent the scores for the assignment in two classes taught by the author in a previous semester. The grade distribution difference between the classes is an interesting one.

However, it is not the purpose of this document to provide any analysis or explanation for these differences. A further longitudinal study might usefully do so.

Table 1. Grade breakdown. Class of 16. Assignment average: 78.819 (B-77.5- < 80) 62.5 in B range.

F(0-59)	D(60-66)	C-(67-69)	C(70-72)	C+(73-76)	B-(77-79)	B (80-82)	B+(83-86)	A-(87-89)	A (90+)
0	*1	*2	1	2	1	1	2	3	5

Table 2. Grade breakdown. Class of 18. Assignment average: 78.33 (B-) 44.4 A range

F(0-59)	D(60-66)	C-(67-69)	C(70-72)	C+(73-76)	B-(77-79)	B (80-82)	B+(83-86)	A-(87-89)	A (90+)
0	0	*1	0	5	4	0	6	0	0

**These students were historically weak writers and often demonstrated a generally low level of understanding of tasks*

In the opinion of the writer, these scores are generally a cause for optimism, especially given the level of difficulty of the task and the second language factor. Typically in our programme, it is not a task that results in a high number of 'A's.

As suggested, further research could focus on the use of control groups to generate a body of data on the assignment over a wider range of class sections. This would allow a qualitative comparative text analysis in order to establish whether there are any significant differences between the quality of documents produced in classes where this approach is used and classes where it is not (Dalton, 2011). As stated above, grade comparisons and analysis for the assignment could also then be made across a higher number of sections.

It has not been the purpose of this study to focus on the issues faced by second language users in this context, but this would be a very useful and interesting focus for further research. In our situation, the particular problems faced by Arabic speaking students while writing a literature review, such as differences in rhetorical style, (Siti Hamin & Mohamed, 2012), various forms of interference

and issues related to the low level of English/Arabic cognates would be a worthy investigation.

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Appendix 1

Teaching materials

Literature review Preparation- Task Specification

This is an *individual deliverable written by each team member*. It will help the team write its background/literature review in the *proposal and the final research report*. Each member should *select two texts* based on *usefulness and relevance* to the team project. These texts need to be compared and the information **synthesized**. Texts should normally be academic texts from **authoritative** sources. They might also be texts that do not actually report research directly from sources but that provide vital factual or scientific information on the topic (such as the EPA website, if you are researching an environmental topic).

The purpose of this task is to **extract** relevant information for a team literature review. You will need to use the skills previously learnt of annotating texts, reading for specific information and note taking. This reading should also help you understand important **variables, concepts and theories** that are relevant to your topic, tell you about research already done and help you *compare and evaluate* what has been done by other researchers. This may help you work out what has not yet been done, give you ideas about the most appropriate and original contribution your team can make, select an appropriate research method for your topic and allow you to summarize important background information.

You should normally combine different approaches to literature review drafting. You will sometimes need to paraphrase (which involves *briefly summarizing* what a paper says on a particular theme *in your own words*). You will also need to identify useful direct citations which need to be clearly marked as citations using “...” with page numbers. Long citations (often above 40 words) should be indented as block quotations. You will be provided with information by your instructor about using a variety of reporting verbs to communicate your own **stance** on the information being reported.

Remember that **ultimately** you will be using the full literature review in your team to identify your own research focus, which could be determined by identifying a gap in the literature. This individual task is a first step towards the full team-drafted literature review.

Possible paraphrase: *One important function of the individual literature review is to assist in the development of the team review. Also, it will help in focusing the research as there may be questions and issues not covered in the texts which the team might gather data on in its research.*

Appendix 2

Context

The team is currently conducting research into.....

Various significant research themes have been identified.....

The following review.....

Summary and focus

(General to specific) [1] describes.....

The author's/text's main focus is.....

Other questions.....

Synthesis

Both studies.....

However.....

Authors' perspectives?

Evaluation

What is the value of the text/s?

What information is specifically useful and for what?

Conclusion

This review has.....

Several major questions.....

Need for further investigation?



According to [1].....

The text/ source/ author,
states/reveals/describes/proposes
that.....

It is stated in [1], [2] that.....

As stated in

[2] shows that...

The research indicates that...

While the studies are similar in
some respects.....

[2] takes a slightly different
perspective/view....

On the one hand....

They agree that.....

On the other hand...

The stated information is useful
for....

The information described can
influence our research.....

This is important/significant/useful
because....

Refine research question, identify
areas of focus for our research,
influence methodology.

Of particular interest is.....

Particularly notable is....