

# Teaching IT Students to Write Literature Reviews

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## ABSTRACT

Undergraduate and postgraduate students learning to write literature reviews are having problems with citations, structure and synthesis. This is due to lack of experience in writing. Attempts have been made to address these issues by increasing the time spent on teaching these students how to write a literature review. In the first attempt with undergraduate students the students did not improve and were making the same mistakes. For the second attempt a more structured approach was taken, this approach was subsequently used with postgraduate students

## Categories and Subject Descriptors

K.3.1 [Computers and Education]: Computer Uses in Education – collaborative learning, computer-assisted instruction (CAI), computer-managed instruction (CMI), distance learning.

## General Terms

Documentation.

## Keywords

Literature Review

## 1. INTRODUCTION

The literature review is an important part of the research process. It should inform the reader about the current state of research in a given topic. It should state the research question and why the research is important and what limits need to be placed on the scope (Creswell, 2012, 2014). However, polytechnic information technology students have little exposure to writing literature reviews. Research in other disciplines suggest that the traditional research methods class is seen by students as uninteresting and boring (Bos & Schneider, 2009). This poster describes how undergraduate and postgraduate students in Whitireia IT programmes are taught to write literature reviews.

## 2. BACKGROUND

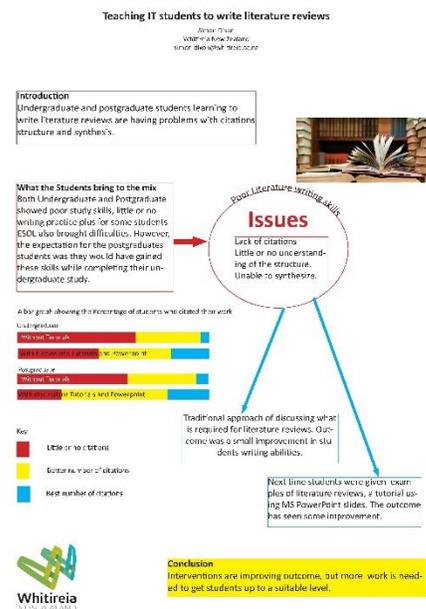
Teaching undergraduate and postgraduate information technology students how to write a literature review can be fraught with all sorts of problems. This is mainly due to their having little or no exposure to writing academic papers, and little or no understanding of the importance of literature reviews in research paradigm. The educational “baggage” that students bring into the classroom also affects their learning ability.

The students at Whitireia fall into three specific groups: Maoris and Pacific Islanders, Pakeha and international students mainly from China and India. A large number of the New Zealand student did not achieve well at school for various reasons. Often they are ill-prepared for academic writing (Marr & Misser, 2008). Also students with English as a second language face problems in understanding what is required and in writing in language not of their own (Qian & Krugly-Smolkska, 2008). The references are also in 9 pt., but that section (see Section 7) is ragged right. References should be published materials accessible to the public. Proprietary information may not be cited. Private communications should be acknowledged, not referenced (e.g., “[Robertson, personal communication]”).

## 3. TEACHING EXPERIENCES

A big assumption made when the author started teaching this paper was that students would understand what a literature review was and how to write one. However, for the above stated reasons this was not the case, the undergraduate students had little understanding of academic writing or literature reviews. They had written business reports and memos, but had not been exposed to academic literature. They knew how to create a reference list with the appropriate layout, but not how to cite work. The postgraduate students were similar, with little exposure to academic writing and little understanding of how to write a literature review.

The issue with the above problems is how to improve student literature review writing abilities. For the second year undergraduate students, the process was broken down into three distinct parts. First, there was a discussion on what a research question was, then they were given examples of a research



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question, then they were given an assignment where they had to come up with a research question. They were allowed to have it checked by the tutor to see if it was suitable and once it was approved they submitted it. The main problem for the students was they tended to make their question too broad and imprecise. The second stage was the students had to carry out a literature search to find references for their topic of research. The reference list had to be in APA format for all the references. This is one area of the process where the students have had previous experience. The main issue here was the students did not always seem to know what to include in the reference and what not to include - students would often put in the search string that appears in the address window in a browser. Even when students were informed about this potential error many would include the search string in their reference list.

The final assignment was to write a literature review. To prepare for this the students were given PowerPoint presentation and participated in a tutorial which discussed what a literature review was, how it is structured, and the language students should and should not use. Students also had access to examples of literature reviews as well as online resources such as tutorials on how to write reviews. The most persistent problem with the students' literature reviews is their lack of citing others work. Students also did not understand the notion of synthesis: bringing together different references into one review. Students tended to either write a mini-review of each article that they had found so that each paragraph was on one article with no link either to the main question or to any the other article, or they tended to write short paragraphs with one or two sentences, which made a point but did not allow an argument to develop. Most of the problems arose because of their lack of experience of writing long pieces and getting feedback, also lack of exposure to academic articles or a model of how to write academic essays.

The postgraduate students had similar problems and similar assumptions were made about their abilities: they would be able to write a literature review with little input from the tutor. This assumption had proven to be incorrect; although one or two students do not seem to have problems writing a literature review,

the majority of postgraduate students doing the Research in IT paper had problems with the structure, the citations and the synthesis of the articles. For this reason more time was given over to literature reviews by way of tutorials on how to write a literature reviews and how to carry out online literature searches.

#### **4. CONCLUSIONS**

Both undergraduate and postgraduate students have problems writing academic papers, their citations are inadequate and structure of the review and synthesis are lacking. This mainly is due to their having little experience writing academic articles. This author has observed that is a common problem with IT undergraduate courses both at Universities and Polytechnics. This leaves the question open: is there an effective way to teach undergraduate and post-graduate students the art of writing literature reviews?

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