What do we achieve by making honours students write research papers?

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Courses that require Honours students to complete substantial individual research papers require a lot of time from both students and staff. In this paper we debate whether the time and effort is really spent in a worthwhile way. The evolution over the last three years of a compulsory Honours course on research methodology is described and the goals, sub-goals, unintended consequences and possible spin-offs of the course are examined critically. The external environment may influence our success but we also try to present convincing evidence to support our arguments and will report on our own research into perceptions and reaction to the course. Hence, we will discuss the students’ responses to an evaluation questionnaire consisting of both open and closed questions and the views of the numerous lecturers in the department who act as supervisors and evaluate the final products as examiners (and second examiners).

1 INTRODUCTION

The BCom Hons course offered at the University of Pretoria attracts more than one hundred students per year. In order to be admitted they need to have achieved a 60% average in the third year of their Bachelors degree. Although the majority of students in the class have BCom (Informatics) degrees, some completed BSc (Computer Science) and others have BA (Information Science) as these two disciplines together with Informatics make up our School of IT. A significant percentage of the group come from other South African universities or from other countries. A high percentage of our Honours students intend completing the course over two years as they have full-time jobs. In order to accommodate them we give lectures only on every second Friday and even swap the morning and afternoon schedule on successive years so that the part-time students will only need to be in class from 13:00 to 17:45. The degree consists of eight modules, four in each semester. The students have a certain amount of choice in the modules, two of which may be offered by other departments.

2 THE RESEARCH METHODOLOGY MODULES

2.1 Goals and Sub-Goals

The purpose of these modules is to introduce students to research. We want them to be able to find research articles of good quality, be able to read them with a degree of insight, to understand in fairly general terms which research approaches exist, to recognise these in the articles read and to know how you go about doing research. Their practical work requires them to make use of the theory and the material that they have found and read, and to combine this with some of their own work. Hence, they need to be able to synthesise ideas and express themselves by writing the research proposal and final research paper. We do not expect the students to produce publishable work. On the other hand we want more than a long essay. During this process we believe we are preparing students who continue with a Masters degree and, we hope, are addressing to some extent the problem of Masters students who complete the coursework but struggle to complete the dissertation.

2.2 Background

Prior to 2005 the research methodology course was a single, mandatory module which, unlike all the other modules, ran for the entire year. The course had two aspects, lectures and writing a research proposal in the first semester, followed by individual work on the research paper supervised by a lecturer allocated to the student. The department recognised that this module was more time-consuming and challenging than most other Honours modules and also that it could easily be divided, so from 2005 we have a first-semester module covering the lectures and proposal and a separate module in the second semester during which the papers will still be written with individual supervision. The students are permitted to devise their own research topics and research questions within the very numerous, broad and varied research areas proposed by the different lecturers. They are not guaranteed that they will be supervised by the lecturer who proposed a topic. Once the proposals are in we have a meeting during which lecturers select students so that every staff member has approximately the same number to supervise.

Since the course, both as a single credit and as a double credit, depends enormously on the cooperation of every lecturer we consult them and involve them in certain ways early in the first half of
the course. This is important as the lecturers need to explain to the students what their research areas are about and what they expect in terms of the work the student will do under their supervision. On the other hand they also need to be clear about what the students have already been taught. It is in this spirit that we elicit comments regarding the course from both staff and students each year.

2.3 What Type of Research and Scope Are the Students Required to Do?

We are firm disciples of the point of view that Informatics (and Information Systems) is a social science and hence that interpretivist and multi-method research is most appropriate. Not only do we believe that purely positivist research does not usually shed much light on issues of interest in Informatics, but also, very few of our students or staff have sufficient statistics knowledge to carry out meaningful statistical analyses. Our university statistical services have neither the resources nor an interest in assisting. Hence we prefer either idiographic, interpretivist research, or in the case of particularly able and advanced students, conceptual research.

"[I]diographic research is concerned with exploring particular cases or events and providing the richest picture of what transpires. The aim is to understand a phenomenon in its own, particular, context. Idiographic research emphasizes the analysis of subjective accounts based on participation or close association with everyday events. In general, social sciences such as history and geography may be seen as having a stronger tradition in idiographic research, while economics would have a stronger tradition in nomothetic research - since the search is for the general laws of economic systems" (Cornford & Smithson, 1996: 45).

Various versions of the type of research paper required have existed in the past. For example, in 2003 we encouraged students to include some entry-level research. For the most part interviews and questionnaires with some open-ended, unstructured questions were used to collect data. Analysis of the results was limited to descriptive statistics together with narrative reporting of selected responses. The standard of this research was not high and we did not expect it to be. In fact very little of the data collected or the analyses could be considered either valid or even interesting. However, an exercise of this sort does give students the experience of ‘going through the motions’ of research, highlights the pitfalls, and engages their interest.

In 2004 we decided to try to simultaneously reduce the work required in the then single-credit course and eliminate the nuisance factor of our students, under our name, going off to interview ‘the public’ and very often wasting everyone’s time. We achieved this by giving students the option of only designing the research, including questionnaires, interview questions, proposing who the research subjects should be, et cetera. Actual data collection, analysis and hence findings and discussion would, therefore not be completed. It is this ‘model’ that is being examined in this paper.

3 RESEARCH QUESTION

For this paper our research question is: What aspects of the Research Methods course succeed and why? The converse is equally important: What aspects of the Research Methods course fail and why? Together these help us decide “What do we achieve?”

4 RESEARCH APPROACH

We used an idiographic research approach of the sort described in the discussion on the research approach the students use. Hence we see this as being a case study where we have observed, engaged with and formally interviewed participants in order to find out their perceptions and reaction to the course. Although we will present some of the results as percentages we are not implying that these are anything more than guidelines. We will, on occasion, speculate on how the external environment influences our success but we will also try to present convincing evidence to support our arguments and will report on our own empirical research into perceptions and reaction to the course.

5 FINDINGS

5.1 Feedback from Supervisors

The lecturers in the Department of Informatics, who all acted as supervisors, were quite divided on the question as to whether their students were well prepared for the writing of the research essay. Some students were well prepared, and others not. It seems that, although students knew the theoretical aspects of research, they were not able to apply these in their own projects. Some even still wanted to change topics, even though the course had already reached the halfway mark. An underlying problem that was identified was that the students' reading and writing skills were not sufficient.
When asked whether they were interested in the topics of all their students, most supervisors said that they indeed were, at least in half of them. Therefore, the idea of supplying students with a list of research focuses seems to be a good idea. Allocation of students to supervisors according to these focus areas was experienced as a better option than random allocation. However, this could lead to an unexpected problem, namely that the low level of research can actually kill a supervisor's interest in the topic. The research is often not useful for the researchers' own agendas. On the other hand, at least one top quality supervisor indicated that most students had not done the necessary preparatory work and the research essay itself were not separated into different courses could be the reason for some students' bad progress since this meant that even very weak students, who could not come up with a good proposal, were allowed to continue with the research essay itself. Their lack of a proper foundation led to bad performance in this second phase. Workload (especially that of part-time students) and limited time were other aspects suggested for students' bad progress.

The main issue regarding supervision of students' work seems to be the question: Who is the project manager? A whole spectrum of approaches was found here:

<table>
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<tr>
<th>Dictator style</th>
<th>Laissez-faire style</th>
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<tr>
<td>Divided work in two-week chunks</td>
<td>Emailed students to make a contract</td>
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<tr>
<td>Let students set pace, but keep tabs on them</td>
<td>Let students set pace, but keep tabs on them</td>
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<tr>
<td>Expected schedule - not enforced</td>
<td>Expected students to manage own project - only gave feedback</td>
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Although the "dictator" had only one student that dropped out, the "contractor" believed that her strict approach set the hurdles too high and scared the students, which led to a lack of confidence. The dropout rate seems to be higher with supervisors who expected the students to manage their own projects.

While some lecturers gave the students assignments which eventually evolved into chapters, others required students to hand in a full chapter at a time. Some kept a file of agreements on next tasks and checked whether the necessary corrections were done at follow-up meetings. Both e-mail and personal communication were used to communicate and give feedback and both methods seemed to work equally well. Students were expected to hand in their material at least two days before an appointment. All supervisors and students were asked to keep records of meetings.

The supervisors were asked whether they feel the standard of the course is high enough. Most replied with a yes or a qualified yes. It was pointed out that the course should be seen in context: it constituted only one eighth of the whole Honours curriculum and it was the first research paper ever written by these students. It was suggested that the standard could be raised by separating the methodology and essay (which has been implemented as from 2005), and by expecting the students to do some empirical or idiographic research. An oral exam could be used to ensure that students have done the work on their own.

The majority of the supervisors felt that they did gain something from the process. Junior staff members gain experience in supervision which is regarded as necessary for each academic. Co-supervision with experienced supervisors was perceived as very helpful. Supervisors also learned from the content and perspectives offered by their students and they often felt obliged to read new material discovered by the students.

Regarding the marking of the students' work according to a mark sheet, one supervisor felt that, although the guidelines could be useful for junior staff, it often resulted in too high a mark being awarded. Referring to the calculation of a final mark from various assignments in combination with the final paper, another lecturer indicated that the "piecemeal allocation of marks" is problematic, and that a serious mismatch was possible between the "pieces" and final paper. We hope that separating the course will solve this problem.

No uniform answer was given when asked if they had any suggestions why fewer students completed their research essays in 2004. Some possibilities suggested are:

- No empirical research meant there was no driving force to stimulate focussed reading
- Pressure of assignments in other courses
• The piecemeal approach gave a false impression that it would be easy to complete the paper
• By reducing content we created an impression of a forgiving attitude
• Bad group spirit – there was no commitment from this particular group of students
• Not enough control
• Students were too dependent
• Students misjudged the time frame

An up-turn in the IT sector meant that more students got work and that the students in the IT sector were working harder in their jobs.

Supervisors had the opportunity to suggest improvements to the course. More than one suggested that the students' reading and writing skills needed to be improved. This has been implemented in 2005 by prescribing a textbook (Cornford & Smithson, 1996), and having students do four assignments and a mid-semester test in which they have to, *inter alia*, discover, analyse and discuss the philosophical points of departure and research approaches in various journal articles. An emphasis has been placed on writing by pointing out the need to focus on one idea at a time and to develop a logical argument.

Another idea suggested to improve the course was involving the final supervisors earlier, thereby enhancing the amount of personal attention. If this is not possible the supervisors should be given a good indication of what was covered in the preparatory course. A solution for improving the usability of the students' work could be to have a number of students working as a team on different aspects of the same topic. The combined results may be more credible than the current fragments. The standard of the final products can be enhanced by requiring the students to get written permission from their supervisors before handing in their final papers for marking. Limiting the number of students (that is, setting a maximum class size) who are allowed to enrol for the degree could lead to competition, which could raise the standards.

5.2 Feedback from Students

In 2004, of the 109 students who did some work towards the course (early drop-outs have been excluded) only 71 submitted their research papers (hence in 2004 65% completed). In 2003 136 students did a reasonable amount of course work and 109 completed the research paper, that is, 80%. It does therefore seem to be important to investigate reasons for this. We published a questionnaire on WebCT at the end of 2004 and also followed up by sending out questionnaires to the students. Unfortunately we got a poor response (12 replies). Clearly this is not a representative sample and probably includes the most conscientious students as is borne out by the fact that all except one of these students say they attended more than 75% of the lectures and 10 of the 12 completed the paper. Nevertheless this group did bring up some interesting issues.

5.2.1 Research topics

The choice of research topic was considered to be crucial. No simple solutions were offered, some (maybe even most) believe that the student is really the major player in this and that his or her own interests, work experience and ability to decide on a topic early are the factors that are relevant, other students thought the lecturers could do more to assist.

“My experience was that I really wanted to start my research but finding a topic was difficult, in the end I just chose a topic to get something done. More guidance in this would be great as I found it very frustrating. For students starting this year and completing their honors over two years it would be great to start thinking about a topic now. A lecture on possible topics at 3rd year level would really help. Formulating a nice topic does take a lot of time.”

Although the importance of choosing a topic early so that the student can apply the assignments (finding articles and summarizing them) to that topic was noted, another view, that it takes time to think about a topic, gain sufficient insight and make a good final choice, is also valid.

Despite the apparent difficulty in choosing a topic, of the twelve students nine said they would choose the same topic if they were to start again. One of the students who did not complete seemed to have identified the choice of topic as at least one of the reasons for not meeting the deadline.

“I felt that if one is going to do so much work on a topic it should be meaningful. Many students chose topics just to get the degree. For this year I already have a topic and hopefully that topic will serve as an indication to me for a career path in this direction.”

How will we respond: Although students have already heard the different lecturers briefly describe
general research areas and have had further discussions on topics in small groups with the lecturers, we will address the issue again in this year by providing students with the opportunity during class to do a series of group exercises focusing on selecting specific topics within research areas. These exercises will be fairly unstructured (workshopping) and the groups will be made up of students interested in topics within the same research area. This will take place after the first article summaries assignment so that students will be able to share information.

5.2.2 Monitoring & scheduling

This issue has been discussed from the lecturers’ point of view in the previous section. It is interesting that a number of the students who replied to our questionnaire raised this when asked, “How can we help you? You need to make real progress on your research paper early. Can you suggest how future students can be helped in this regard?” They proposed that additional milestones, targets and deadlines, such as per chapter and for a final draft of the completed paper before the end of year examination period, be implemented. The need to start early was repeated by almost everyone. The scheduled activities in the first semester were not unanimously perceived to have worked as shown by the replies to the question: Did the assignments set as part of the work in Semester 1 help you to get involved in your research? Yes (7) No (5). Answers to another question reflect the subjective aspects: Which was the most difficult part of the research paper? Five students selected “Getting yourself into the correct frame of mind to do the work” in preference to practical aspects such as finding suitable articles (selected by 6 students).

Response: We are considering the proposal to add a new deadline for the draft paper but we do not want to enforce more deadlines as:

a) These students are not a representative group and already seem to be self-disciplined,

b) Students might like the idea in theory but not in practice,

c) Senior students should be encouraged to develop self-discipline, and finally

d) Not all lecturers want to do the additional administration or to be forced to work in close cooperation regarding submitting additional marks et cetera.

5.2.3 Empirical research

Possibly the most interesting finding from the students’ responses was their attitude to carrying on their research to its final conclusions. No one who completed the practical part of the research believed that it had been the wrong decision. However five students responded that they did not do the empirical work but wish that they had; four students completed the research and are pleased that they did; and the remaining three said they did not do the actual research work (in other words they designed the research but did not actually carry it out) and believed that they made the right choice.

When asked, “Do you think that students should be required to complete the empirical research, that is, actually collect and analyse data?” eleven of the twelve thought that they should, although six of these selected the qualified response “Yes, but not a lot. It is not worth the time spent”. Two enforced the answers by adding to the “Yes, definitely” option.

- “Yes, definitely (they will learn so much more)”
- “Yes, definitely; 50 Pages sound so much, if you know you will be able to write about your analysis it is a bit more comforting."

This is confirmed by the following quotations from three students regarding the best part of the course:

- “Executing the interviews. It was very informative and interesting.”
- “The actual research was most interesting.”
- “Observing the participants in the research.”

The rest of the students highlighted the value of the individual supervision.

6 CONCLUSION

Students are being made aware of the difference between market research and academic research. We emphasise the fact that the research paradigm of the natural science is not the only valid approach and that Informatics research should rather be seen as a social science activity for which other perspectives, such as qualitative and interpretative methodologies, often are more valuable. Although they often do not produce work that is publishable, they are knowledgeable about the requirements and procedures of academic writing. They know how difficult it is to find good academic sources and where to look for these. We provide them with sufficient theory and practical exercise to be able to read their sources critically and to use the information and critique in a constructive way without mere parroting existing literature. We believe that the students realise the value of this
course. When asked about the amount of work required for this course (remember in 2004 this was still a single credit) the majority (8) felt that it was a lot, but worthwhile. Only three thought it was excessive and one said it was not too much.

We will make the students’ remarks obtained during this research and our SACLA paper available to this year’s students. Best students’ papers will be made available with their permission and, as in the past, these students will be invited to address the class of this year about their papers and the experience. There are prizes, sponsored by ABSA, awarded to the ten best papers.

The Department's lecturers also benefit from being involved as supervisors for these honours students. Junior staff members have the opportunity to get experience in supervision, sometimes under the guidance of more senior lecturers, preparing them not only to supervise students on higher levels but also in conducting their own advanced studies and research. More experienced supervisors use the opportunity to coordinate their students' efforts and to integrate these into their own research projects. This stimulates and promotes their own publication efforts.

7 BIBLIOGRAPHY