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Computer Facilitated Reflective Practice in a Postgraduate Supervisor's Feedback to Students

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Keywords

Reflective practice, Postgraduate supervision, Reflexivity, Teaching research, Research advisor

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Abstract

Reflective practice has been adopted by many teachers, including dissertation advisors who provide 1:1 teaching of research students. This paper discusses issues arising from our use of qualitative data analysis software (QDAS) for reflective practice and provides an analysis of the thematic coding and word/pattern searches of feedback given to postgraduate research students. We subjected written feedback provided by one dissertation advisor to three different analyses: thematic, text-string and text-pattern search. We found that use of QDAS in a thematic analysis of feedback provides new insights by indicating areas of strength and areas for improvement. Text and pattern searches are more useful in flagging students with specific learning issues.

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Introduction

Postgraduate training programmes involve teachers who engage in one-on-one teaching in graduate programs that lead to degrees such as PhD, Master's or in some countries, Honors level. In Australia, the term 'advisor' or 'supervisor' is used to denote the teacher, whereas in other countries, the term "dissertation advisor" is used; and refers primarily to the chair of the dissertation committee (Spillett and Moisiewicz, 2004). Ideally, the teacher-student relationship is collaborative, developing from negotiated, mutually satisfactory arrangements between the student and the advisor (Zuber-Skerritt & Roche, 2004).

A major way in which the teacher can accommodate individual student needs is through reflective practice. The teacher uses reflection as a tool to improve his/her practice through a process of observation and thought (Schon, 1987). Thus reflectivity entails the teacher continuously questioning the validity and efficacy of his/her actions (Ostorga, 2006), with a view to improving teaching method (Bintz & Dillard, 2007).

This research arose during discussions with colleagues who were concerned about how they could demonstrate intangible skills such as reflectivity of practice. There is ample evidence that reflective practice leads to improved teaching of postgraduate research (Bleakley, 1999). The problem is that, even for the most reflective practitioners, it is difficult to provide evidence of reflectivity. Indeed, unless the actual practice of reflectivity is made explicit, there is a danger that it will remain little more than a device for according the *appearance* of academic rigour (Allen, 2004). There is very little

written in the literature about how to conduct and demonstrate reflective practice in postgraduate supervision.

We felt that it would be possible to apply a systematic approach, such as is used in qualitative research, and use qualitative data analysis software (QDAS) to identify the key components of research supervision of one of the authors. The aim was to a) clarify the substantive feedback a dissertation advisor provided to students, b) identify areas in which this individual's practice could be improved, and c) determine if QDAS provided an effective means of demonstrating reflective practice.

This paper discusses issues arising from the use of qualitative software (NVivo) for reflective practice and provides the results of the thematic coding and searches of a dissertation advisor's practices. We had available to us for analysis, hundreds of pages of written feedback which had been provided to students over a number of years.

This paper indicates the extent to which the tools of qualitative research can be applied to facilitate reflective practice.

Review of the Literature

Although there are many variables that affect completion of a postgraduate thesis, the individual dissertation advisor is critical in all aspects of the supervision and research training experience (Marsh, Rowe, & Martin, 2002). The literature has identified many of the personal and professional attributes of effective supervisors, including "advisor style" which describes the general approach of advisors to both the task of research supervision and to the relationship between teacher and student (Hammick & Acker, 1998). Zuber-Skerritt and Roche (2004) detail indicators of effective teacher style as the advisor knowing what he/she wants, being encouraging, insightful, resourceful, committed to the student and directed by the student's needs. Other attributes associated with effective research supervision include ensuring that assessment and examination processes maintain high academic standards (Cryer & Mertens, 2003; TWIG Writing Group, 1996) and being aware of the dissertation process at the institution. This includes having an understanding of all the schedules, deadlines and personnel responsible for each part of the dissertation process (Lenz, 1997).

The effect of these multiple demands is that research advisors can find themselves in the difficult position of having to provide encouragement and support to a student while enforcing institution rules and deadlines. Spillett and Moisiewicz (2004) portray the potentially contradictory roles of student supporter and institution policeman as comprising four separate roles. These include the Cheerleader, who demonstrates belief in students' abilities and encourages the student's effort, and the Coach, who builds research skills. The other roles are the Counselor who removes blocks, and the Critic, whose job is to build the student's sense of ownership, the goal of which should be professional socialization in the roles they will need for employment and career (Benaquisto, 2000). However, little guidance is offered to prepare supervisors for these multiple roles, and it is often left up to the individual to develop an effective teaching style through trial, error and self-reflection (Spillett & Moisiewicz, 2004). Indeed, it is through self reflection that Zuber-Skerritt and Roche (2004) and Benaquisto (2000) arrived at their conceptualisations.

Most teachers and supervisors probably would say they are reflective, and that this improves their practice. However, would a methodologically structured self-analysis yield benefits that were not available through less formalized means? Could QDAS facilitate this, and would it be worth the effort?

QDAS is designed to enable analysis of language at the word, sentence or paragraph level. It also can be used to search for particular words or phrases. The underlying logic of coding and searching for thematic material is very similar to manual techniques (Thompson, 2002). *Text-string* searches match exact words or phrases and *text-pattern* searching enables searches for words with similar meanings (Durian, 2002).

There are several advantages to QDAS. These include an ability to deal with large amounts of data, and a reduction in the amount of time needed for manual handling tasks (Thompson, 2002). QDAS also provide a more visible audit trail in data analysis because segments of data are not likely to be lost or overlooked during retrieval (St John & Johnson, 2000).

However, there are also disadvantages to the use of QDAS. These include the financial cost of obtaining a software licence and the need for training and practice in order for users to become proficient of the program. Another limitation is described by Thompson (2002) who feels that there is a danger that the program can drive the analysis rather than vice versa, which can lead to cutting corners and findings that lack credibility. Finally, Welsh (2002) argues that many social science researchers do not have the expertise to make informed assessments of the different software choices, thus decisions about the program may be based on things other than the program being the best one for the job.

Purpose

The aim of this study was to evaluate QDAS, specifically NVivo, in facilitating and formalising reflective practice. We used a case-study self-report approach which has precedence in the literature (see for example Benaquisto, 2000; Spillett & Moisiejewicz, 2004; Zuber-Skerritt & Roche, 2004), in which we approached a dissertation advisor's documented feedback to students as data. This paper is the result.

Method

This study utilised a qualitative paradigm in which text rather than numbers is used as the unit of analysis. In this study, the students to whom the feedback was provided were research higher degree students. In Australia, postgraduate students complete an extensive thesis at either the PhD, Master's or Honors level (Marsh, Rowe, & Martin, 2002). For the PhD and Master's, there is little or no formal course work and the focus is a final thesis (dissertation) that is externally examined. Postgraduate honors students are enrolled in an extra year, dedicated to a research thesis, at the end of their three year bachelors degree. For this study, we utilized written feedback provided to eight former research students from honours through to PhD levels. The theses were on a variety of topics using qualitative and quantitative methods. The feedback was predominantly via email, which the supervisor prefers because it is efficient, quick and provides a complete record of interactions. We also included written notes provided on hardcopies which students who preferred face-to-face meeting returned to us for the purpose of this analysis.

A thematic analysis is conducted in three broad stages and is based on the assumption that people share some common experiences during specific events, such as being a postgraduate research student. In order to identify these common experiences via a thematic analysis, firstly, significant words and phrases are highlighted on the transcripts (Van Manen, 1997). The second step of analysis consists of labelling and categorizing these highlighted "codes". Codes that pertain to similar categories are grouped together. Thus, in Figure 1, the sub-themes of 'encouragement', 'reframing', 'avoiding pitfalls' and

'scaffolding' all contribute to the way in which the advisor engineers success for the student. Because these sub-themes were developed from direct quotes ("codes") from all transcripts, we can conclude that the theme of 'engineering success' is common for all students of this particular advisor. The provision of the quotes/codes in this paper provides a means of validating/clarifying the analysis.

The final stage of the analysis is to categorize the sub-themes into themes. In this case, three themes of 'product', 'process' and 'investment' reflected how this dissertation advisor conceptualized her teaching. This type of analysis is an iterative approach (Colaizzi, 1978; Grbich, 1998; Moustakas, 1990; Patton, 2002; Van Manen, 1997) in which already analysed transcripts are revisited every time a new code is identified in a subsequent transcript.

Enumerating the Codes

In addition to the content analysis two other similarly focused, but more quantitative, analyses but were conducted consisted of a text-string (word) and a text-pattern (phrase) search of key words and phrases that emerged through the first analysis. For all analyses, the QDAS NVivo (QSR International Pty. Ltd., 1999-2000) was used.

Raw Data

In order to develop a dataset for analysis, we copied the comments into new documents, one new document for each student. We ended up with eight documents, each one including all written feedback to an individual student, in temporal sequence from the beginning to the end of the supervision process. We then treated these documents as transcripts and subjected them to thematic analysis.

Rigor (reliability and validity)

Credibility of the analysis was established through having two of the supervisor's students read the analysis and comment on the extent to which it reflected their experiences. Re-analysis of the transcripts based on their feedback led to revisions of the analysis. For example, the theme, "telling it like it is" was originally coded as "ticking off the student", which one student felt conveyed a harshness that was not part of their experience with this advisor. In addition, the final analysis was reviewed by a university professor with over 40 years teaching experience. He concurred with the themes and the analysis. Finally, the second author of this paper examined the transcripts and emerging themes and collaborated in identifying quotes that exemplified the themes described in this paper.

Ethics

Due to reasons of confidentiality, we did not analyse the feedback given to students from the advisor's current place of employment. In addition, details that might identify a specific research topic or institution have been changed to more generic terms.

Results

From the thematic analysis, 38 categories and sub-categories of feedback were identified. These were grouped into three main themes; the process, the product and the investment.

The Process

The majority of postgraduate supervision activities related to the process of teaching research. This involved three major activities of groundwork, systematization of workload and building success into the process. Figure 1 provides concepts that contribute to this theme.

Groundwork was very noticeable early in the research supervision process. It included activities such as "talking the same language". This includes instructions on how to use

the 'track changes' function of Word, and how the student could get the best use out of the supervisor's time; *"when doing so much cutting and pasting of sections, it makes it hard (for me at least) to follow."*

We found that it was very important for the advisor to demonstrate respect for the student as part of the groundwork. It was very clear that having passed a research methods class did not provide students with all the skills they needed, and this left them feeling inadequate. Demonstrating respect for the students would let them know that the supervisor would not belittle them and would take their questions seriously. This enabled the individuals to settle quickly into the give and take of teaching and learning research, which included an acknowledgement that sometimes they know best:

"You're right...I was thinking about an alternative way to cut the budget down when I emailed you and I got confused. I'm not mad at you and I'm sorry if I sounded that way."

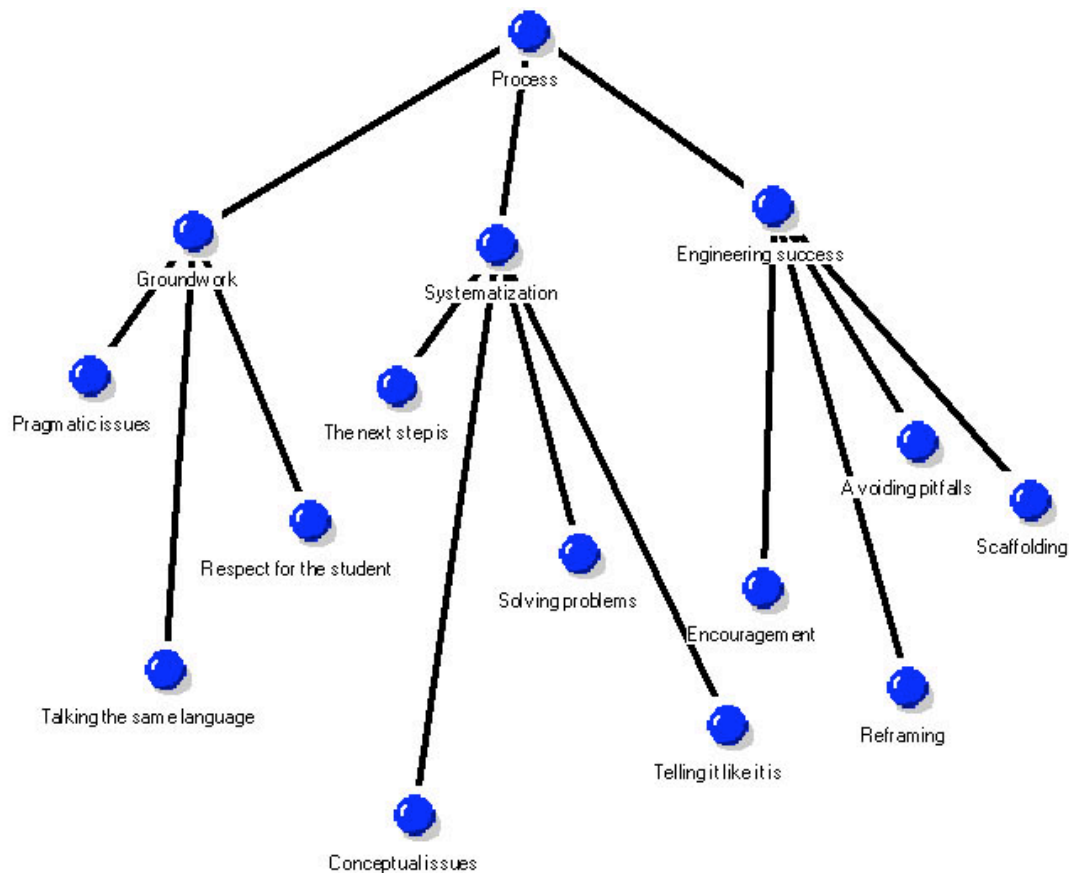
Finally, setting the groundwork included communicating pragmatic issues involved in the administrative requirements of the university such as where to find the plethora of forms, policies, procedures and deadlines that apply, and the timing of the sampling frame:

Now would be a good time to use the electoral roll as we have just had an election and they do lots of advertising to make sure people are registered at their current addresses."

A surprising amount of feedback involved 'systemization', or getting systems in place, which cut down time-wasting activities. This included preparing the student for the next step of the research before they got there,

Well, the [examiner's] report [of your proposal] was pretty much as expected, so we just have to wait for the other report. I think it is important to know that you DO NOT have to re-write your proposal. The suggestions are more about what you need to do for your thesis. Therefore, while you wait for the second reviewer, think about starting your chapter 1 of your thesis."

Systemization also entailed ensuring that the student was clear on conceptual issues so that literature searches, for example, were focused; solving problems promptly and even reprimanding students by holding them account for substandard efforts such as sending me rambling drafts that they hadn't bothered to edit.

Figure 1. Elements of *The process*

Another aspect of systemization occurred in the early clarification of conceptual issues. The supervisor often used metaphors to explain these to students:

Your intuitions and own experiences are an integral part of qualitative research and your use of language has to reflect that your decisions about methodology came about because of your deliberations ... I think an analogy is like a sculptor who is technically excellent but is able to breathe life and feeling into the lump of clay he has been given. Feeling without technique leads to a bad sculpture. Technique without insight leads to bland perfection. Technique and insight lead to art.

We found that 'solving problems' was part of systemization because the supervisor expected problems in student research and had strategies to nip these in the bud. Finally, part of the system was to provide feedback that kept the student on track. Occasionally this required what we have called "telling it like it is".

A full time master's student should spend 37 hours per week on the thesis. A part time student is expected to spend 18 hours a week. At this stage, I'm not sure whether the poor quality of your work is due to the fact that you are not spending the amount of time on your thesis that you need to, or that you really don't understand how to write a literature review. If it is the former, I suggest you spend the amount of time required, or withdraw...

and

I have spent 3 hours trying to figure out what you are saying. It was so disjointed and confusing that I finally had to scan the document and basically re-

write what you had done as there were too many corrections to make. I got about 1/2 way through your 4 page document in that time. A lot of my corrections were guesses, because I really had a hard time trying to figure out the point you were trying to make. I asked you to write an essay, and this document looked like a summary in point form of one text book.

This level of harshness was surprising and confronting, and the advisor (one of the authors of this paper) has since made efforts to rein in the frustration experienced with students who did not seem to be putting in the level of effort required.

The third sub-theme that contributed to the process of postgraduate supervision was 'engineering success' for the student. During an early iteration of the analysis, this block of activities was coded as "anxiety reduction" but this label did not reflect the extent to which the research process was engineered so that confidence emerged from within the students' own accomplishments rather than by simply experiencing a reduction in anxiety. Activities which contributed to 'engineering success' included encouragement, reframing, scaffolding and avoiding pitfalls.

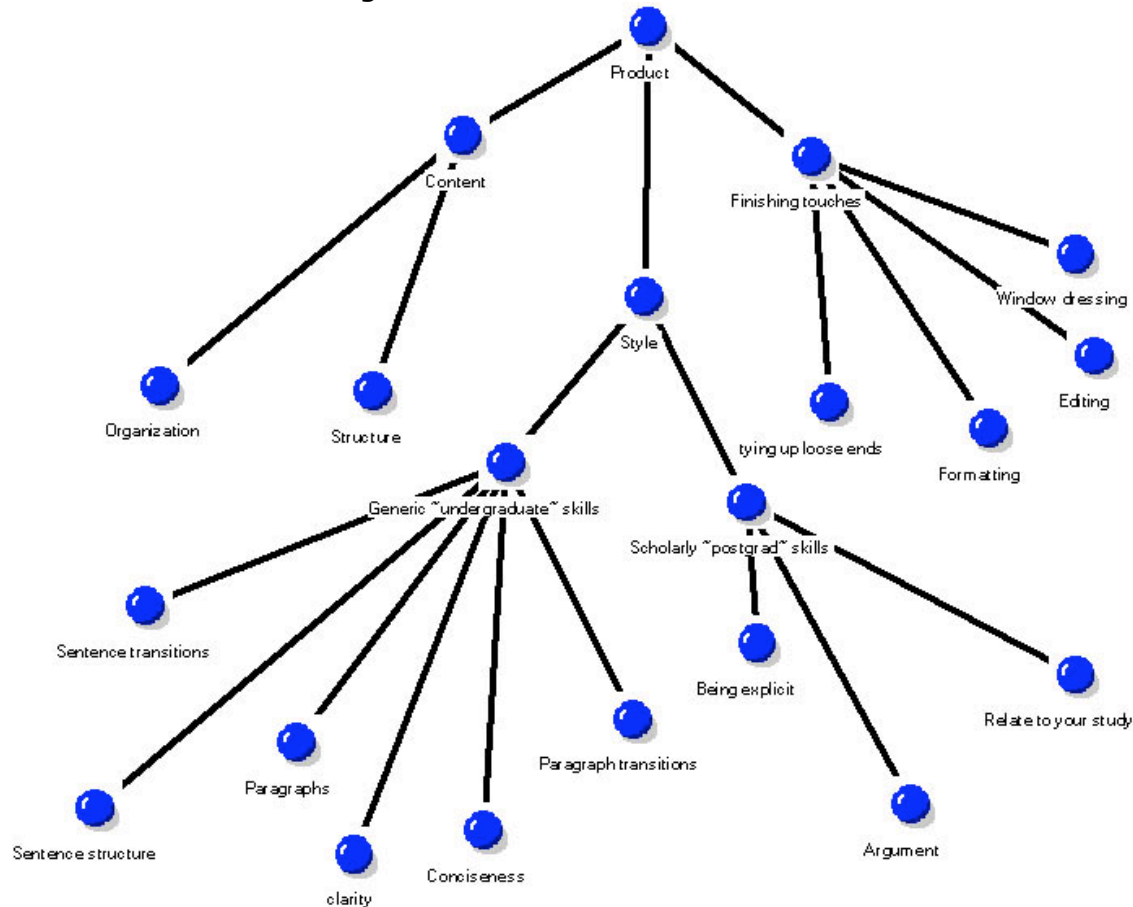
A related supervisory action focused on teaching the student to develop ways of conceptualising issues as internal sources of encouragement. In the psychology literature this technique is known as "reframing" and its purpose is to alter the meaning of something by altering its description. For example, an anxious student worried about an oral defence (confirmation) of her proposal was emailed: *The main thing to remember is that there are only 4 hoops to jump through. Thus when your confirmation is completed you will have only 3: ethics approval from [The Institution], ethics approval from [the agency] and then your thesis examination. This means you are just about 1/4 through your thesis.* In this way the oral presentation became reframed as a hoop to jump through instead of a public judgement of a student's work.

Another example of reframing is,

I've skimmed your proposal and it is definitely on the right track. However, there is a kind of disorganisation of your ideas, so I've suggested that you write me a series of essays. As you send one to me I'll tell you what the next essay will be. The essays will pretty much only require you to cut and paste from the material you've sent me. The benefit of this activity is that it will keep your argument clear and not contaminate one idea with another one.

The Product

The product of the supervision relationship was the completed thesis, examination-ready and is conceptualised in Figure 2. This product is the result of three main interventions: content, style and finishing touches.

Figure 2. Elements of *The Product*

About one third of the feedback to students related to basic skills that we thought should have been achieved at high school or at the undergraduate level. Paragraphing was the most common problem encountered. This included identification of a topic sentence and use of transitions between sentences and paragraphs. Typical examples of feedback included,

Make sure that each sentence makes one point only [and] that the point relates to the topic sentence (first sentence) of each paragraph.

And

A non-sequitor is something that appears out of sequence. Sometimes you have a sentence that is not in the right place in a paragraph. When you see non-sequitor you need to search and find the sentence that is out of order. Then you decide to:

- a.) Move it to another place in the paragraph.*
- b.) Delete it.*
- c.) Re-word it and keep it where it is.*

In addition to these basic skills, the supervisor also gave feedback on the more sophisticated scholarly style issues. This included development of an argument, such as *"Be clear about the point of your argument. I think it is that [the existing] definitions are [no good] and your research is going to address the issue?"* and being explicit:

Your conclusion doesn't appear to follow the previous statement. Try to say what you want very directly. Was this finding expected or unexpected? Why? How does this finding add to the literature? How does the literature help you to contextualize your findings?

Feedback regarding finishing touches occurred predominantly at the write-up stage and included ensuring that there were no loose ends: *"This is 1980s dollars. Is that low [income]? Poverty line? Can you find out what the mean/median income was back then?"*

Finally, feedback was provided about what we have termed 'window dressing', which included the use of appropriate terminology, *"put in the term "essence" to describe the central theme of your research"* and style,

The content is great, but it is pretty bland and boring. Chapter 4 is expected to be boring, but chapter 5 is used to make up for that. There should be a hint (implicit, not explicit) of excitement and wonder about your findings. This is done using several techniques.

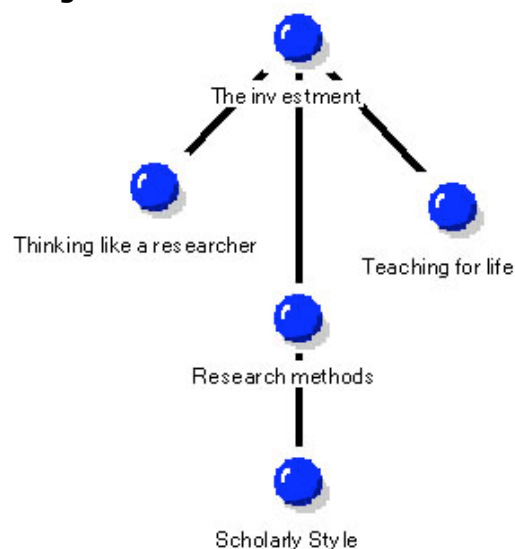
- use of words: choose carefully
- use of comparison: use words like "unlike ..." or "as expected ..." etc.
- shorten sentences occasionally to add emphasis.

and,

Summarise a bit. Don't bother listing what was not significant; just say what was and say that results of all variables are in the appendix. That way you can get rid of the sub-headings (which break up the flow of what you are saying).

The Investment

Figure 3: Elements of *The investment*



The third main theme that emerged (Figure 3) was that a large part of the feedback concerned what we have termed the 'investment'. This is basically feedback that prepared each student for life after the degree has been conferred. Until we had completed the thematic analysis, the supervisor had no idea that she had been providing

feedback according to the students' professional aspirations. However, for some students who were looking to work in the health or social science field, constructs such as developing a professional niche/expertise was the focus of feedback: *We have a lot of specialties [in your profession] but if you can make a case for [your research topic] as a speciality, you will have invented a job for yourself.*

For some students the investment entailed preparation for their lives as researchers or academics. Specific areas of feedback given to students with research career aspirations included the future application of essential skills they were learning:

Once you have the basics under your belt you will find that it takes a lot less drafts to get the right "tone". Once you have this elusive skill you can supervise other students, write research articles and grant applications. It just takes practice like any other skill.

and deeper explanations of style issues, such as to a married, male student:

There is a rule in writing theses and proposals that a person never starts a paragraph with an author's name. The reason for this is as follows in a parable:

You and your wife are having an argument. She says you never do any housework and you say she spends too much of your hard earned money. Neither of you argues by saying "Mary Jones said that you didn't do housework" or "Phil told me that you spent too much money". This is because the topic of the argument is not what Mary or Phil think or say... it is about housework and money. Therefore, your wife says things like "you never take out the rubbish. The last time you took out the rubbish was in 1984... You reply "and you are not spending the money on cleaning products. Last month you bought \$90 worth of makeup".

As you can see, each person says what they think/believe and then backs it up with evidence. This is the same format your proposal should take. Instead of saying "Jones (1999) says this"... , say "Qualitative studies have investigated this and left some unanswered questions. Brown (2000) highlighted this by his study which found xxx and Bloggs (2001) identified that yyy. This research will seek to clarify these issues".

Text (word) Searching

We next carried out a text search using words that kept cropping up during the thematic analysis. These included terms such as "examiners", "paragraphing" and "argument", which were the most common codes identified in the thematic analysis.

The NVivo string search yielded results that helped us to identify specific students with problems, and to quantify the problems. This information was less helpful than the thematic search because the results focused on *student* attributes rather than on the supervisor's *teaching style*, the focus of reflective practice. For example, we used the term "topic sentence" as a text search through all the documents. The search resulted in the identification of five students who had received written feedback about topic sentences. As can be seen in table 1, "Annie" and "Robin" were the people who needed the most reminding about the use of a topic sentence.

Thus the text search provided information about the specific learning needs of the students which could also potentially provide evidence for formal evaluation of a student's progress. We were also able to import the findings into SPSS and create a graph that highlights the differing abilities of students for each issue. However, the supervisor was already very aware of the problems Annie and Robin were having with the

concept of topic sentences, and the NVivo text search didn't provide her with any new information. It was also limited in that we might have used other words or phrases to explain the concept, and we still had to determine the context in which the term had been used; which could have been to praise, correct or just mention in passing. In order to address this limitation we carried out a third analysis using a text-pattern search.

Table 1. Results of a text search for the term, "topic sentence"

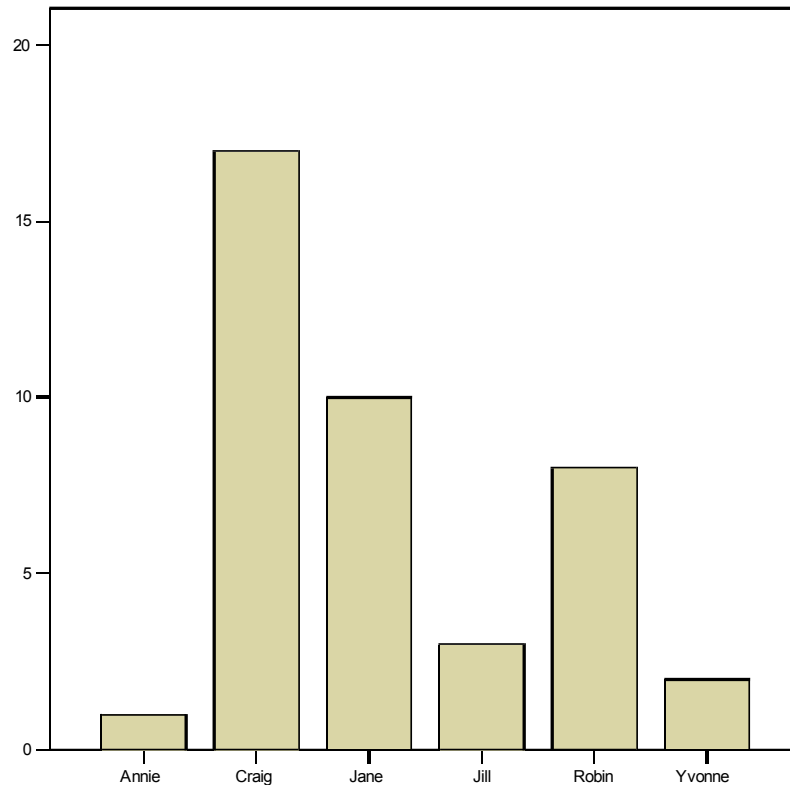
| Student | My comments pertaining to the search item "topic sentence" |
|---------|---|
| "Annie" | <ol style="list-style-type: none"> 1. I'm not sure if the topic sentence of this paragraph matches the rest of the paragraph. 2. State your topic sentence directly: "women commit just one tenth of all homicides, but over one third of child homicides". 3. Get a clear topic sentence for this paragraph....What point are you trying to make? 4. Clearer topic sentence: is this paragraph about perpetrator gender differences or victim age differences? 5. Need a topic sentence |
| "Craig" | <ol style="list-style-type: none"> 1. Some organizational schemes are imposed on paragraphs to achieve a certain emphasis. The most common is the general-to-specific scheme, in which the topic sentence generally comes first and then the following sentences become increasingly specific. |
| "Robin" | <ol style="list-style-type: none"> 1. This topic sentence is too general. Make it reflect the rest of the paragraph content. 2. Topic sentences: what is the main point of this paragraph? 3. This topic sentence is focused on the articles. Change the sentences to reflect the point/argument you are making rather than the literature itself. |
| "Jane" | <ol style="list-style-type: none"> 1. This paragraph needs a topic sentence about nursing socialization being particularly stressful. 2. Be less generic and more specific in the topic sentence of this paragraph. |
| "Jill" | <ol style="list-style-type: none"> 1. You need a topic sentence in each paragraph so that each paragraph makes only one point. 2. Make sure that each sentence makes one point only that the point relates to the topic sentence (first sentence) of each paragraph. |

Pattern Search

A text search of the term "argument" yielded the information that the supervisor had given feedback about developing an argument 17 times to Craig, 10 times to Jane and 8

times to Robin. Figure 4 provides details for all students for whom developing an argument was problematic.

Figure 4. Results of a text search for "Argument"



A Boolean search of "argument" OR "the point" yielded more hits than the string search, but the results were less delimited. There were an additional three hits for Craig, with only one being argument-based: "put in an introductory paragraph which explains the point you are going to make". However, this search also picked up two uses of the phrase "the point" in ways more conceptually related to technical writing aspects: "If you can't back up your point with a reference, you can't make the point in your proposal". Similarly, Robin gained another three comments focused on the argument and one on writing technique. Yvonne got one hit that was not related to feedback regarding the point of the argument.

This led to a total of 52 hits for the pattern "argument or "the point", although five of these were conceptually incorrect. This demonstrates an error rate of 9.6%. In this exercise we were able to filter these false hits very easily, so they did not pose a validity problem. Our main issue was that for the purpose of facilitation of supervisor reflectivity, both the text and pattern searches were focused more on student learning issues than the advisor's teaching strategies.

Discussion

We found two unexpected things in undertaking this QDAS reflective activity. The first is that using a thematic analysis is a useful and productive form of self-reflection, whether or not qualitative software is used. The second is that reflective analysis using QDAS required us to be a great deal more thorough and methodical than the advisor usually is in practice. This is because, as Maclaran and Catterall (2002) explain, the program "forced" us to think about each piece of data. This led to new insights, especially in

relation to how individual activities relate to each other to form broad scopes of practice, and how blunt the advisor can occasionally be in her comments.

Specific areas where the thematic analysis has suggested new strategies include the advisor's being too ready to correct grammar and avoid pitfalls. When we look at the pages of repeated feedback given to some students on points of generic 'undergraduate' skills, the teacher agrees that she was too quick to provide solutions; and is focusing on developing strategies to help students develop the ability to self-correct. These new strategies have now been incorporated into the 'system'.

Limitations of This Research

This analysis is based on the writing of one person, who also happened to be one of the people who conducted the analysis of feedback to students in only one (Australian) postgraduate system. Only written (usually email) feedback was analysed. This is essentially a one-way process that excluded analysis of data from the other party, in this case the student. We are sure that transcripts/observations of meetings with students would reveal new themes through mutual interactions.

In addition, we do not view one supervisor's practice as that of an "every-advisor" since feedback to students is always influenced by age, gender, discipline and socio-political context. For example, recent funding models for Australian universities (with a focus on quick completions), has made research advisors become much more pragmatic about getting students "through" than was the case ten years ago. Thus the feedback analysed for this paper demonstrates a snapshot of one university teacher's more recent working life.

From an epistemological perspective, analysing one's own feedback as research data can be viewed as a limitation of this paper because of the possibility of exacerbation of biases and blind spots (Lacity, 1994). However, there is precedence in the literature for a case-study self-report approach (see for example, Benaquisto, 2000; McKenna, 2007; Spillett & Moisiejewicz, 2004; Zuber-Skerritt & Roche, 2004), and some explicit support (Naimon, 2000) for the practice. Other authors would argue that analysis of one's own writings increases validity by reducing the researcher-object distance (Cohen, 2005). In the end, it is up to each reader to decide the extent to which a similar endeavour will be of use to them.

In terms of the use of QDAS for reflective deconstruction, the main limitation became evident in the text pattern search. The Boolean search results required careful analysis because the phrase "the point", for example, was used in various ways and had to be manually filtered. Although this pattern search did uncover several instances where a string search for "the argument" missed, for the purpose of reflectivity of teaching practice, we found both the string and pattern searches not particularly informative since they tended to provide information that we had already uncovered from the thematic analysis. It is as Welsh (2002) concludes, too easy to extend the coding beyond any real benefit.

Conclusions

Use of QDAS in a thematic analysis does yield valid, useful insights beyond what we think could have been achieved without this external structure. It could be especially useful in providing concrete evidence of practice for use by academics who might want to conduct such an analysis and present it for annual reviews. It can also indicate areas of strength and areas for improvement in broad categories such as this advisor's 'the process' or

more specific areas. In addition, this methodology is very adaptable for use in classroom, practica and clinical settings: wherever there is a reasonable quantity of written feedback. For example when the same advisor was teaching research methods courses, she categorised her feedback to students on their assignment (a research proposal) and found that the majority of her comments pertained to students' development of their argument. As a result, she added more activities related to this topic in the course.

The efficiency of coding and developing models created by NVivo makes the process significantly quicker than a manual thematic analysis. The easy importation of documents makes reflective coding a tidy, straightforward process. However, for people unfamiliar with QDAS, it would be a very time consuming exercise to learn the program for a one-off endeavour.

From a practical perspective, this exercise has led to a change on the behaviour of the research team when undertaking research supervision. The most significant change has been the decision on behalf of the advisor to avoid providing repetitive correction. Instead, for example, one correction is made with the following comment:

I've skimmed your chapter 5 and it is very good. It contains the right information. However, there are some style issues that now need to be addressed. I've indicated these in the first page, so you can see the types of things I am talking about. Please read my comments and suggestions before you click on "accept changes". I need you to really understand why I have made the suggestions/changes so that you can keep editing the rest of the chapter yourself.

It is anticipated that by approaching this aspect of research supervision in this manner, the student is enabled to further refine their writing skills without overly burdening the dissertation advisor.

Recommendations

Qualitative researchers, familiar with a qualitative analysis program should find this a straightforward method to identify and categorise skills they use in postgraduate supervision. On the other hand, people unfamiliar with thematic analysis and/or its software will need to consider whether the benefits of the activity are worth the costs of hours involved in learning the skills required. It is possible that the relatively easy automated coding using word or pattern searches may provide sufficient value for people who are not interested in carrying out an in-depth thematic analysis.

Secondly, the thematic analysis, compared to the text searches, provides evidence of reflexivity and a means of conceptualising one's practice. However, it does require a relatively large amount of data in order for patterns to emerge. The main advantage of using QDAS, facilitation of manual handling of large amounts of data, would not be realised with limited textual data. Text and pattern searching is quicker and easier, but was of limited value for teacher self reflection of practice. However, if feedback from multiple teachers were subjected to a string/pattern search, this would be very helpful in identifying areas of common need amongst postgraduate students within a department.

QDAS primarily facilitated an editing research style, focussing on data categorisation and exploration of patterns, rather than a holistic/interpretive style. It also did not take the teacher's thoughts, feelings and non-verbal actions into account. As a consequence, the results are far more delimited for reflective practice than analysis of a reflective journal would be; although for the express purpose of reflection of written feedback to students, it did lead to changes in practice regarding what feedback was provided and how it was

presented. For a more holistic view, we suggest the inclusion of an electronic reflective journal as an additional data source in the analysis.

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