

The Self in Research and Other Matters: A Study of Doctoral Students' Conceptions

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Abstract

This study uses metaphor analysis to examine doctoral students' conceptions obtained from their responses to an on-line survey. The conceptions examined were the conception of self in research, the conception of the PhD, the conception of knowledge, and the conception of the outcomes of research. The conceptions found were allocated to the categories of 'organic', 'spatial', 'explorative' and 'constructive', the same categories as were used in a previous study of the students' conceptions of research. A number of interesting relationships were found and are discussed, including the relationship of the conceptions to each other and to the demographic data obtained in the survey. Some tentative conclusions are discussed and some speculation indulged in. Since the supervisor/student relationship may be affected by any mis-match between their conceptions, that mis-match, if present, will also affect the student's progress and development.

Keywords: metaphor analysis; doctoral students; conceptions; PhD student's development;

Introduction

In discussing metaphors many writers make a similar point that metaphors are often unconsciously generated. It is for that reason that metaphors are a useful way of investigating people's attitudes and conceptions. Since the metaphors are often unconsciously generated they will reflect the person's underlying feelings and understanding, which they may be unable or unwilling to express consciously.

As the name implies, metaphor analysis is a systematic method of analysing the metaphors that people use to express themselves. It is a means of gaining understanding of a person's often unconscious motives and reasons for doing something or of their conception of the process involved in doing it. It can often reveal the thoughts behind the action.

As Brown *et al* state:

The premise behind this methodology is that by examining the metaphors that human beings use in describing their experiences and beliefs, researchers can begin to uncover meanings beneath those the writer or speaker directly or consciously articulates. (Brown *et al* 2005:3).

Martin and Lueckenhausen add that metaphor analysis focuses on what individuals say, and can provide a view into what they say and think about what is happening to them or their feelings (Martin and Lueckenhausen 2005:391).

This study was a follow-up to a previous study of doctoral students' conceptions of research using metaphor analysis. Metaphor analysis was again used for this study. In carefully examining the survey responses I found a number of conceptions other than those of research, such as conceptions of the self in research, conceptions of knowledge and conceptions of the PhD, as well as conceptions related to various aspects of research such as the outcomes. These conceptions did not seem to relate directly to the conceptions of research found in the previous analysis. Why there is no correspondence is not readily apparent from studying the responses. The same conceptions were not found in every response, as some conceptions appeared in some responses but not others. There were some similarities but also some differences between the conceptions that appeared in various responses. In general it can be said that the conceptions found varied from response to response. I found that no single conception appeared in all responses. The most common conception was the conception of the self in research. This and other conceptions that were found are discussed further below. As part of the discussion of the new results found in this investigation I relate them to the results found in the previous metaphor analysis, by considering any correspondence within the categories found on the two investigations.

All the doctoral students in an Australian research-intensive university were invited by email to take part in an on-line survey. Fifty-nine responded positively by taking the survey. The survey was approved by the Ethics Committee of the university. In the survey the students were asked questions about what doing a PhD meant to them. The questions were asked in the form of an email from a friend who was thinking of undertaking a PhD and wanted to know what it entailed. The friend says, "I'm not really sure I want to be a researcher, or what doctoral research is all about.". She then asks a number of questions to which the student was asked to respond by writing his or her answers. The questions asked were "What is doctoral research all about? What do you actually do in your doctorate? Why do you do those things? What's the point of the research you do?"

This study was aimed at understanding doctoral students conceptions in a number of areas. Those conceptions were extracted from the responses to the survey in the form of the metaphors referring to them. Each response was read a number of times to ensure that all the metaphors were found. Where there was any doubt over a word or phrase being or not being a metaphor recourse was made to a dictionary. Where the word or phrase is used literally and matches the dictionary definition it is not a metaphor. When all the metaphors in each response had been found they were listed in their categories of conceptions on separate sheets of paper for ease of working. Then comparisons were made between the categories, both within a response and between responses, looking for any relationships between the occurrence of the categories, between the categories and the demographic data and with the previously found conceptions of research.

At this point I made the assumption that the strength of the conception held by the respondent was indicated by the number of phrases referring to it in the response. In other words, I assumed that the more metaphors used in writing or speaking about the subject the stronger the conception is held. I make this assumption based on the idea that the more strongly someone feels about a matter the more to the forefront of their mind it will be and so will appear more often in their speech or writing. Thus the more metaphors a respondent used in describing a conception the higher I rated the strength of the conception. For

instance, I rated response 48 as very high with conceptions of self expressed eight times, response 59 as high with three references and response 56 as low with only one reference to the conception of self in research. The other conceptions were graded in a similar fashion. The assumption on which this decision was made is supported by Andriessen and Gubbins (2009). Strength in the 'conception of self' does not mean the same as strength in the 'conception of the PhD' since they are different conceptions. A respondent can have different strengths for the two (and the other) conceptions, or be lacking any of them.

It is vitally important that doctoral students' conceptions of research be understood by those who supervise the students. A mis-match between the supervisor's and the student's conceptions of research may lead to problems with the supervisor/student relationship and thus to the student having problems with his or her research and/or not completing the PhD (Bills, 2004; Lee, 2008). If the supervisors are aware of the mis-match between their students' conceptions of research and their own then steps can be taken to reduce the risk of any complications arising from the mis-match. Since any mis-match between the conceptions held by the supervisor and student might lead to problems in the supervisor/student relationship they would also affect the progress and development of the student. Therefore, the results discussed in this paper should be of interest to both supervisors and students.

The Conceptions

In some cases the other conceptions – the conception of self in research, the conception of the PhD, the conception of the outcomes of research and the conception of knowledge – match the category of conception of research into which the response was placed but in many cases they have to be allocated to different categories. For example, in response 1 knowledge was described as being 'produced' which would place it in the category of 'organic'. In the same response 'outcomes of research' were described as 'the end of the research process', again being 'organic'. Thus both were placed in the category of 'organic' which was also the category of conception of research into which the response was placed. It can be seen that, in this case, the category of 'organic' covered the conceptions of knowledge, outcomes of research and research itself. That is, the participant's conceptions of all three were placed in the same category.

Similarly, response 51 shows the conception of the PhD as 'explorative' when describing it as 'a journey', and thus the category matches the category of conception of research which was also 'explorative'. Further examples would show that response 12 shows the conception of outcomes of research as 'constructive' – the same category as the participant's conception of research – and that response 2 shows a conception of knowledge as being 'spatial' which matches the participant's conception of research.

A consideration of the demographic factors did not indicate any correlation between them and the responses discussed above. It appears that the participants have none of the demographic factors in common and thus that there is no apparent reason why the conceptions discussed should match the conception of research in the same response. In most cases only one other conception matched the conception of research whereas other cases, such as response 1 for which examples are given above, show a number of conceptions which can be placed in the same category as the conception of research. However, there are many more examples where the conceptions of self in

research, outcomes of research, knowledge and the PhD do not match the category of the conception of research. Indeed, in some responses all the conceptions present fall within different categories.

For example, in response 48 the conception of self in research was very strongly 'organic' and the conception of the PhD was also 'organic' but the conception of research was 'explorative'. Why there should be such a disparity is not evident from the response. However, I would suggest that for the conception of self to be 'organic' is quite logical since it is a conception of the person as an organic being undertaking the research. Indeed, the conception of self as 'organic' appeared in many responses. At first glance there did not appear to be any relationships between the conceptions and other factors. However, on deeper examination a few did appear. I discuss these relationships below and offer some conjectures as to their significance.

The first relationship that I noticed was that the response (12) which had previously been placed in the category of 'research is constructive' also showed a strong conception of the self in research. This respondent referred to 'carrying out your research' and 'commit[ting] yourself to the undertaking' amongst other things. The demographic data gathered from this respondent shows that she is a female, domestic, anthropology student in the second year of her candidature. The response did not show a conception of the PhD nor a conception of knowledge. Unfortunately she is a single case and no great value can be placed on the relationship since there were no other anthropology students nor respondents in the category of 'research is constructive' against which to check the association. However, the question arises "Do any of the factors in this case have any relationship to the factors in other responses?" It is something worth looking into, and will be considered below after discussing another response with some similarities.

Another response (48) that attracted my attention has a very strong conception of the self in research. It is stronger than that shown in the case discussed above. The respondent spoke of 'get[ting] a buzz', 'hunting for a specific result' and [having] to fight for what you do', amongst other phrases. This respondent (48) is a female, domestic, science student in the fourth year of her candidature. The response was previously placed in the 'research is explorative' category. This response did not show a conception of outcomes of research nor a conception of knowledge. However, again it is difficult to see anything worthwhile in this relationship as the factors appear to be unrelated to the strong conception.

Although this response and the one discussed above both had strong to very strong conceptions of the self in research the only other common factors are that both are female domestic students. These factors are probably not significant, although it is not useful to generalise from only two cases. However, there are a large number of female domestic students who do not match either of the cases discussed above. Also, there are other strongly expressed conceptions of the self in research that do not match to any great degree. This suggests that those characteristics are not significant.

There were a number of other strong conceptions of the self in research other than the two discussed above (19, 20, 21, 24, 25, 26, 27, 41, and 49). This grouping is of some interest since the responses 19 to 27 all were previously allocated to the conception of 'research is spatial'. However, it appears that the connection does not indicate anything significant as others with that conception of research did not show such a strong expression of the self in research and responses allocated to other conceptions of research did show

conceptions of the self in research. Further, there was no apparent connection between the strong conception of self and the demographic data: The respondents who expressed a strong conception of self in research were a mixed lot of gender, background, areas of study and years of candidature.

There were two strong expressions of the PhD (11, 16). Of these one was male (16) and the other was female (11), one had an arts background (16) and the other a science background (11). Both were domestic students in the third year of their candidature. Both these cases were previously placed in the category of 'research is spatial'. However, the demographic factors do not seem to relate to the strong conception of the PhD, since there were other third year students in other categories who did not express strong conceptions of the PhD. It appears that these two cases are too dissimilar to suggest any connection.

Other strong expressions of the conception of the PhD appeared in responses 14 and 15. There were only two similarities between these two respondents in that both were male and were studying the sciences: physics (14) and ecology (15). One was a domestic student (15) and the other an international student (14) in different years of their candidature. They were allocated to different categories of conceptions of research. Again there did not appear to be any strong connection between these two respondents.

There were two strong expressions of the conception of the outcomes of research (1, 9). Both these responses were allocated to the conception of 'research is organic' amongst many other responses. There was no other relationship as there was no similarity in genders, cultures, areas of study or years of candidature. There were no strong conceptions of knowledge. The conception appeared in responses across genders, cultural backgrounds, areas of research and years of candidature.

Discussion

The importance of the PhD students' conceptions of the self in research, the PhD and other matters is important since it might affect their progress and development. Bills (2004) and Lee (2008) have both discussed the importance of any differences in conceptions held by the supervisor and the student. A mismatch can result in problems in the relationship that may affect the progress, time to completion and development of the student.

The responses showed a number of strong conceptions of the self in research and of the PhD. There were fewer expressions of the outcomes of research and knowledge. I suggest that this might have been due to the nature of the questions asked in the survey. The questions asked respondents to describe their work and research as PhD students and what it meant to them. Thus, while answering the questions the respondents would have been focusing on themselves and their relationships to their PhD research. It seems to me that that would produce the high number of references to the self in research and to the PhD itself. In other words, the many references to the self in research and the PhD might be a result of the way the questions were phrased.

Although the conception of self in research was more common and usually more strongly held, as indicated by the number of instances in the response than the conception of the PhD, neither appeared in all responses. The conceptions of self in research and the conception of the PhD appeared side by side in many, but not all, of the responses. Also, there were some very strong conceptions of the self in research as indicated by the number of expressions in individual responses but in general the conceptions of the PhD occurred less strongly.

However, digging deeper into the data does raise some interesting questions. Why do the conceptions appear together some times but not others? Why are there some responses that have neither a conception of self in research nor a conception of the PhD? What is it about the conceptions that makes them relevant to each other so that some people hold one, both, or neither? The answers to these and other questions are worth considering and I will attempt to answer them below.

Consider the two conceptions. The conception of self in research indicates that the respondent sees the importance of their own person in their research. This is often accompanied by thoughts about the importance of the outcomes of the research either for personal advancement or for the good of society. The conception of the PhD indicates that the respondent was thinking about the process of doing the PhD while answering the questions. In the case of the conception of the PhD there is often a personal flavour to the comments about the PhD. These effects may be present because the intention of the survey questions was to elicit the respondents' personal views of the PhD and the research involved. In both cases there is an aspect of the personal expressed: It is a common thread to the responses containing the conceptions. From this occurrence we can suggest that combining the two conceptions indicates the importance of the person in the PhD research. This combination of the two conceptions suggests a broader view of the respondents than relying solely on the occurrence of just one conception. Why then do some responses have one or the other or neither of the conceptions? Why don't all the respondents use metaphors to express a conception of research and conception of the PhD? What is it that makes the respondents differ so much?

Going back to the responses suggests some tentative answers to the above questions. It is noticeable that all of the respondents who expressed a strong conception of research were female students. Thus there may be some link to the demographic data. However, the less strongly held conceptions did not appear similarly related. In other words, although some female students held much stronger conceptions of self in research than any of the males, there were many more females whose strength of conception only equalled that of the males.

One female respondent (48) held a very strong conception of self in research. She expressed herself in strong term such as 'hunting' for a result and 'fighting for what you do'. As well she said that she gets a 'buzz' out of research and it is 'very stimulating'. This respondent also expressed a weak conception of the PhD. Of the other women who expressed a fairly strong conception of the self in research (19,20,21,25,26, 41) only one (20) also expressed a conception of the PhD.

Perhaps this is a way that we can understand the difference in the strength of the conception. Perhaps the more passionate the respondent is about her/his research the stronger the conception. The case described above (48) supports this conclusion. It seems to me that a person who feels strongly about something will express their conception of the subject equally strongly: Strong feelings will invoke strong words. Consider the occurrence of 'hunting' and 'fighting' in the above case. This suggests that for this woman research is far from being a half-hearted exploit!

This also suggests a reason why the conception of self in research is usually weaker when it is expressed alongside the conception of the PhD. If the respondent's passion is spread over two conceptions then it may be difficult, if not impossible, to have strong feelings about both. This conjecture is in some

way supported by the fact that the woman who had a very strong conception of self in research only had a weak conception of the PhD. Further, it can be surmised, those who express a conception of the PhD but not a conception of self in the research have more strength of feeling for their PhD itself than the research involved. The next logical conclusion is that those who did not express either a conception of self in research nor a conception of the PhD were not passionate about their research or their PhDs. However, I would not like to express that conclusion too strongly on the basis of what data I have.

There is another slight relationship to the demographic data and to the previously found conceptions of research, although too much weight should not be placed on the relationship due to the small number of respondents represented. In the earlier analysis two responses (57,58) were placed in the category of 'research is organic'. Respondent 57 is male and respondent 58 is female. Respondent 57 showed a conception of both the self in research and of the PhD, whereas respondent 58 showed neither conception. Both respondents were domestic students in the second year of their PhDs. In this grouping, therefore, respondent 57 conceived of research as organic, was a male domestic student in his second year and had conceptions of both the self in research and conception of the PhD. Respondent 58 also conceived of research as organic, was a female domestic student in her second year and showed neither a conception of self in research nor a conception of the PhD. What, if anything, can be deduced from these relationships?

In this limited context it can be said that female domestic students in their second year of their PhDs who hold the conception of 'research is organic' do not hold any conceptions of the self in research nor conceptions of the PhD. On the other hand, male domestic students in the second year of their PhDs who hold the conception of 'research is organic' also hold conceptions of the self in research and conceptions of the PhD. Whether these relationships would hold up in a wider context is unknown as there is insufficient data to support a definite conclusion. Thus, at this stage, it must remain an interesting conjecture that may or may not be true. But what else could be deduced if this conjecture did hold up when more data was obtained?

If such a relationship did hold when further data was obtained it might have some interesting consequences. It would be possible to state the tentative deductions above much more strongly. It would be possible to say definitely that certain groups of people will have conceptions of self in research and conceptions of the PhD, whereas other people definitely will not. That in itself would be a useful and interesting result in understanding those groups of people and might be important when deciding who is to supervise certain research students. The literature states that mismatches in conceptions of research can affect the supervisor/student relationship. Perhaps the other conceptions discussed here are also important and their presence or absence looms large in the relationship. Only further research will prove the point one way or the other.

Conclusions

There did not appear to be any consistent relationship between the conceptions of self in research, of the outcomes of research, of knowledge and of the PhD and the conception of research in the majority of responses. As noted above some of those conceptions did align with the conception of research of the response but mostly that did not occur. Indeed, the ones that did not match were found to be in the majority.

Why this should be so is not apparent from a careful study of the responses and the demographic data. There does not appear to be any common factor that would link any of the responses to each other nor to the demographic data. It would appear that the various conceptions of the participants fell into different categories simply because the participants conceived of them that way. This would suggest that when the majority of people expresses their conception of any matter, be it their conception of self in research, of the outcomes of the research, of the PhD, of knowledge or probably of any other matter, their conception is expressed in metaphors that have a particular meaning for them while thinking of that topic. The metaphors used might vary with the time and the situation in which they are thinking of the topic or they might vary randomly. From the data gathered in this investigation it is impossible to tell. Their conceptions might then be expressed using a different category of metaphors when discussing other topics even though those other topics might be closely related to the first ones or even when discussing the same topic. In other words, the majority of people do not appear to be consistent in the category of metaphors used to describe different topics even when those topics are closely related. Why this should be so is an interesting question but is beyond the scope of this investigation and the data gathered. Another interesting question is why some people appear to be at least partly consistent in their use of metaphors while others do not. Again, this question and its possible answers are beyond the scope of this investigation.

To me it appears possible that the reason that the conception of self in research is so strong is that one of the survey questions asked the students to discuss *their experience* of research. I suspect that this question might have been taken as requiring discussion of themselves *vis a vis* research and thus caused them to talk about themselves *in* their research. In other words, the strength of the expression of the conception of self in research might be an artefact of the question asked of the students. This is perhaps something that might have been considered when planning the survey.

It can be suggested that the conception of research as problem solving is expressed strongly because it is the one of the important things that will be in the mind of any PhD student. Solving a research problem is part of the justification for doing a PhD. Similarly, the students are particularly interested in the outcomes of their research since upon that point rests their success or otherwise at the PhD. For these reasons, as well, the PhD will be in the forefront of their minds when answering questions about their research since they are *PhD* students. Thus the strength with which these conceptions were expressed might be a result of the respondents being PhD students in particular. Since obtaining PhD students conceptions was the aim of the survey, the results obtained in the form of conceptions are focussed on that group.

In the conception of research as problem solving the problem itself appears to be most important. The conceptions of outcomes does not always appear alongside the conception of research as problem solving. This suggests that to the respondent the problem itself is more important than the outcomes of the research. The outcomes are seen only as the result of the problem solving. In the conception of outcomes of research the respondent's attention is on the way the results impact on the wider society or professional community. The self in the research and the particular problems to be solved are less important than the outcomes.

In the conception of the PhD the most important aspect of the PhD is seen as its function as a training exercise and for the advancement and

improvement of the person undertaking it. Research and its outcomes are seen as most important in the way that they impact on the PhD and its successful conclusion rather than for themselves as seen in some other conceptions.

In this report I have discussed the 'conceptions of self in research' and the 'conceptions of the PhD' and other conceptions as I found them in my survey responses. I have discussed some possible relationships between the conceptions, the demographic data and the results of a previous analysis into conceptions of research. I have also indulged in some conjecture linking those factors and come to some tentative conclusions. It is apparent that more work is required to strengthen my suggestions into reliable results or to eliminate them as merely incidental coincidences.

The importance of these findings becomes apparent when considering the effect of mis-matches in conceptions between supervisors and doctoral students. That mis-match can have a deleterious effect on the supervision in practice. This paper is intended to alert supervisors to some of the conceptions held by doctoral students and, perhaps, to help them to become aware of differences between those conceptions and their own. Becoming aware of the problem is the first step in solving or avoiding it.

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