

# PhD Musings

## 2

Rod Pitcher

PhD Musings

# PhD Musings 2

More Postings from a Serving PhD Student

*Rod Pitcher*

© Copyright 2013 Rod Pitcher

Published by 3P Publications, Canberra, Australia.  
Distributed worldwide by obooko.

This is a legally distributed free edition from [www.obooko.com](http://www.obooko.com)

The author's intellectual property rights are protected by international Copyright law. You are licensed to use this digital copy strictly for your personal enjoyment only: it must not be redistributed or offered for sale in any form.

**- 3P Publications -**  
Canberra, Australia

## Contents

Introduction .....	2
On being a PhD student.....	4
Keeping a PhD journal.....	7
Nearing the end .....	9
Revealing the colour and personality in texts.....	11
The labyrinth of research.....	14
Cooking and serving your dissertation .....	17
On the eve of submission.....	20
The use of metaphors in science and technology .....	22
Ethics and publishing.....	24
Life after submission.....	27
The PhD as rite of passage .....	29
Yes, there is life after PhD .....	31
Previous Posting .....	34
About the Author .....	35

## Introduction

Here's another collection of my forum postings. Again I cover a lot of area, all of which relates in some way to doing a PhD.

I hope that you find the book interesting and that some of the ideas expressed herein are useful to you.

The subtitle of this book – “More postings of a serving PhD student” – came about partly as a description of the contents, that is, they are more postings from various web forums. Also it satisfies my delight in words that have multiple meanings. ‘Serving’ has three relevant meanings here.

Firstly, ‘serving’ refers to doing ones time and duty in an important position such as that of a diplomat or in the armed services. It can also refer, of course, to ‘doing time’ in prison. I feel that, in one or other of these senses (take your pick), I am ‘serving’ my time as a PhD student.

Secondly, it can refer to delivering something to a person, such as a meal. I see this book as ‘serving’ up some interesting bits to you, the reader. I am ‘serving’ the postings up to you for your delectation.

Thirdly, in tennis, ‘serving’ means sending the ball across the court to one's opponent for him or her to return and so to set up a backwards and forwards interaction. Thus I am ‘serving’ the pieces here to you, my readers, with the hope that they will join the ‘game’ and take part with me, comment on the book and perhaps start to submit postings of your own.

I'm still serving my time as a PhD student but am nearing the end. I'm presently waiting for the examiners' reports on my thesis. Then there will, hopefully, only be a few revisions to do and I can graduate and call myself ‘Dr’.

At the back of the book is a listing of the forums where these articles were first posted in case you would like to see the original publications. They have pictures and other graphics on them which I have not included in this book. Also there are

## PhD Musings

feedback and comments from some of the people who read them that you might find interesting.

## **On being a PhD student**

In learning to be a PhD student one has to learn many things. Learning to do research and write up the results is one very important part. However, learning to overcome the problems is another. The problems that have to be coped with are similar to those that one suffers in everyday life, but they seem more focussed when doing a PhD. According to the literature many PhD students give up and drop out due to stress and worry causing depression. Thus it is important to be able to defuse them when necessary. Learning to cope with the problems will also help you in everyday life.

Here I don't discuss the learning to do research or writing – there are plenty of places where they can be learnt. Rather I discuss the problems of stress, worry, and other things. I would argue that knowing what they are like and learning to cope with them is another important skill that comes from doing a PhD.

Being a PhD student takes up a large part of one's life. It is not something that should be undertaken merely on a whim. One must be committed to getting the PhD, or the stress and worry isn't worth it. On the other hand, the rewards are worth striving for.

### **The stress**

Being stressed is an inherent part of the PhD candidature. There the stress of trying to get work done, the stress of waiting for comments on the work, the stress of trying to get one's work published, the stress of giving seminars. All these add up to a lot of stress. There's not much that can be done about it except try to keep it from getting out of hand by taking breaks and learning to relax. To combat the stress learning to relax is an important factor. You should always discuss your stress with your supervisor – after all, s/he is there to help you succeed and get your PhD.

### **The worry**

Alongside the stress of the PhD there's the constant worry about whether it will all come to a satisfactory end, whether one's work is good enough, interpreting one's supervisor's wishes and suggestions. Again, there's not much that can be done about it except learning to live with it. If you aren't the worrying type of person you are lucky. On the other hand, the worry does act as an incentive to get on with the work to get it over and done with. Again, learning to relax will help with the worry, as will talking about your problems to your supervisor

### **The depression**

Most PhD students get depressed at some time during their candidature. Again, it is something that you have to learn to cope with. When the work isn't going well and the seems endless, it is natural that one's spirit should flag. The best thing is to find something interesting to do, not necessarily PhD work, to take your mind off the depression and revive your interest in life. It's always useful to have an interesting hobby that you can use as a distraction.

### **The work**

Some of the work is sheer drudgery. It can be boring, tiring and thoroughly exhausting. However, much of the work is rewarding, interesting and worthwhile. It appears from my experience that you can't have one without the other. The best approach is to enjoy what you can and just plod along and get the drudgery done so that you can get on with the next interesting bit. Keep in mind that you started the PhD because you were interested in the topic. When things go bad try to remember that. Also remember that eventually the good times will come back.

### **The rewards**

The rewards for doing the PhD should be obvious to you if you have already taken on the task. The big one to many people is getting to be called Doctor, but there are others.

## PhD Musings

Do you want an academic career? Then you will need the PhD to get it. It will form the basis on which to develop your academic career.

Do you want to develop yourself? Doing research and writing your thesis cannot help but expand your horizons and develop your thinking.

On top of these rewards there's the satisfaction of a job done properly and well. Completing one's thesis and having it accepted must become important to all PhD student otherwise there's a severe lack of incentive to do the work.

Recognition that you have done useful and significant research and sent your results out into the world to be discussed and used by your academic peers is rewarding and achieves the aim of advancing your field of research.

The results of your work might be important and change the shape of the world, either in a big way or, more likely, in your own little corner of academe. The recognition of your peers can establish your reputation in your chosen field and help you earn academic promotion.

The PhD is worth the effort. There's no doubt that it will change you. You will come out of the far end of your candidature being a different person from the one who started. All the stress and worries can be beaten – the fact that other people have done it proves that it can be done. All you have to do is decide how much you want the PhD. As in learning the skills of research and writing, learning how to cope with the stress and worry is an important part of the PhD which will serve you well in later life.

Remember, too, that most if not all PhD students have had the same stress and worries. They have learn how to cope with them, and so can you. The PhD is a constant learning process, make the most of it.



## Keeping a PhD journal

I have found that keeping a PhD journal is a very useful and profitable way to occupy my time. I note down many things that happen during the day, such as meetings, discussions, decisions and ideas that come to me. All are grist to my PhD journal mill.

Occasionally something in the journal turns out to be important such as proving that something happened at a particular time or place to satisfy an argument. But more often the journal is just a place to play with ideas.

I use the journal as a sounding board for my ideas. I ‘talk’ to it about what I’m thinking and how my thoughts surround some idea that may or may not have any relevance to my research at some later or earlier date. The journal helps me to think through ideas and clear up my thinking about them.

I keep my journal on my computer. If I try to write longhand to keep up with my thoughts I can’t read my own writing. Using the computer allows me to get the ideas down quickly. It doesn’t matter if the spelling and grammar are not the best. At least it’s readable. If the idea becomes important for some reason at a later date it can be cleaned up for public consumption. For my own use, near enough is good enough. The important thing is to get the flow of thoughts written down. As the pages fill up I print them out and put them in a folder. Each year goes in its own folder to make it easier to go back and find something when I need it. I have spent many happy and profitable hours going back and reading my old thoughts.

A PhD journal can hold your thoughts about many things. What you chose to put in it is up to you, but I would recommend that you start one if you don’t already have one going. Use it as a sounding board, a test of ideas, an archive for bits and pieces about your candidature. You never know what might be useful. If you don’t write it down somewhere you will forget it. A journal is an ideal place to put all the bits and pieces of writing that you don’t know what else to do with.

I am writing my thesis as the story of my development as a researcher. My journal is being very useful for the notes I made

## PhD Musings

in the past as I sorted out particular problems with my research or played with useful ideas. It is also interesting for its own sake as a document of my time as a PhD student. If ever I write my autobiography my PhD journal will become invaluable for the information it contains about my time as a PhD student.

There's no reason why you have to stop keeping a journal when you finish your PhD. If you go on to an academic career, keeping a journal will still be useful, for all the same reasons as keeping a PhD one was useful.

## Nearing the end

Now that I'm approaching the end of my PhD I'm getting to hate it. My thesis is in the final stages of being ready for submission – it needs only another lot of revisions suggested by my Supervisory Panel to be done and then it will be finished. But I'm tired and depressed and I want to give up. It's only the thought that giving up would mean that I've wasted the last four years that keeps me going.

But is that a good enough reason to keep going? I don't think so. The years haven't really been wasted. I've learnt a lot, not only about research and my topic but about myself, too. If I gave up now I would still have the knowledge and experience I've gained in doing my PhD. Wouldn't it be better to leave with that feeling of accomplishing something rather than continuing on getting more and more fed up?

I'm retired so having a PhD won't help me in my job. Also, I have no interest in starting a second career as an academic. So what's the use of finishing – and why did I bother starting in the first place?

I undertook the PhD to learn how to do research and because I had an interesting – to me – topic. I have long had an interest in metaphors and wanted to learn more about the way people in particular circumstances use them. Studying how people use metaphors to describe their research seemed to fit the bill very well. On that high note I started and my interest kept me going for most of my four years. However, I have achieved the understanding I wanted: Finishing up writing up the results is the major problem.

I have been told that it is common for PhD students in the final phase of writing up to become depressed and feel like giving up. What can I say that might help me, and others, to get through this stage?

I have found that the results are not only of interest to me. In having my results published in journal papers I have helped others. The citations of my papers show that other people

have read them and benefitted from them. In this way I have contributed to the knowledge on my subject. Finishing off the thesis will allow me to make my results and knowledge available to a wider range of people. My thesis will contain not only the results of my research but explanations of how I got there that may help others who follow in my footsteps. If I don't finish my work much of that knowledge will be lost to the academic world.

Assuming that I finish, I shall have the satisfaction of completing a job I started. If I give up I shall probably always regret it. Not finishing a job of work could then become a habit that affected any further efforts of mine. It may cast a cloud on any further work I want to accomplish. In other words, failing to finish the PhD may prevent me from finishing anything else I start later in life. I may become an utter failure at everything, including life itself.

Thirdly, but by no means the least reason, finishing would repay my Supervisory Panel for the advice and support they have given me over the last four years. It might be argued that they are only doing the job they are paid to do, but it goes deeper than that. I know from experience that my Panel members have put a lot of work and effort into supporting me that goes above and beyond the call of duty. Without their support I wouldn't have lasted this long: With their support I can finish the job we started together. The university would also be repaid for the cost of providing me with support and equipment such as computers and an office in which to work. Without that support my PhD would have been impossible.

Having re-read what I have just written I feel that giving up is the wrong thing to do, not only for me, but for everyone involved with my PhD. Not only would I, myself, be rewarded by finishing but so would my Panel and those people who will in the future follow in my footsteps and extend my work. I owe it to those people to finish and so does every PhD student. That thought will give me the will to carry on and finish my PhD. I can then be proud to call myself 'Doctor' knowing that I have done something useful with my life and proven myself capable of finishing a difficult job.

## **Revealing the colour and personality in texts**

An interesting phenomenon arose from my experience with figurative language. It tells us a lot about the people we research, which I find very interesting.

I have come to the conclusion that in analysing a text, either quantitatively or qualitatively, a lot of valuable and useful data is thrown away by ignoring words that are used figuratively, such as metaphors, exaggerations and pictorials. These words express something about the 'person' in the text. This is sometimes considered unimportant, but I want to argue that this data is not unimportant, that it can add another dimension to the analysis.

### **The Words**

There are three types of words and phrases that are particularly useful for providing colour and personality. They are metaphors, exaggerations and pictorials.

#### *Metaphors*

Metaphors represent the subject under discussion as something else. Although the subject is not really as described, the metaphor adds to the view of it by adding colour and depth to the description. For instance, in the phrase 'life is a journey of discovery' extra meaning is added to the idea of 'life'. Life is not really a journey, it is not really a movement from one place to another, although some journeys may take place in one's life. But describing 'life' as a 'journey of discovery' adds colour to the word 'life'. It expresses an idea that life is movement and experience of movement and excitement. It suggests that going through one's life is like moving from place to place experiencing different things, even if one stays in the same place. 'Life' is given some of the characteristics of a journey which helps us to better understand its meaning to the person using it. It can be seen that saying 'life is a journey of discovery' adds meaning to the word 'life'. It increases the impact of the simple word 'life'.

### *Exaggerations*

Exaggerations are the forms of adjectives and adverbs that are meant to express extreme or superior values, but are used in ordinary speech to just mean a large amount or degree. Such words as ‘countless’, ‘always’ and ‘terrific’ are found in texts. These words perform the act of emphasis rather than taking on their original meanings.

When we say that something is ‘countless’, we don’t mean literally that it can’t be counted. Rather we mean ‘a large amount of something’. When we say something is ‘terrific’ we don’t mean that it literally inspires terror. We mean that it is interesting and exciting. ‘Always’ doesn’t mean forever, it just means ‘for a long time’.

### *Pictorials*

Pictorial are words that conjure up a picture in the readers’ minds.

Pictorials include such words as ‘fruitful’ which has the literal meaning of ‘producing fruit’, and which conjures up visions of trees full of apples, pears or other fruit in the reader’s mind. Obviously when ‘fruitful’ is applied to research it does not mean ‘producing apples and pears’ but that the research produces some other useful result. In other words, the word ‘fruitful’ is not used literally when describing research, even though it is used to conjure up a picture of something useful and worthwhile being produced.

### **Finding the Words**

The best guide to which words are used figuratively is your intuition. If you feel that a word or phrase has more meaning attached to it than its meaning in the context of the text then it is a word for which you are looking.

Does the word mean more, taken literally, than it does in the text? Does it conjure up a picture in your mind? Does it express an idea that goes beyond the text? If the answer to any of these questions is “Yes”, then it is a useful word for our purposes here.

### **Conclusions: Why do it?**

Why do it? Why look for the figurative words and phrases in a text and treat them as data?

Because the respondents are telling you something about themselves. Looking at the figurative words and phrases will tell you something about your respondents' attitudes and conceptions. It will put the 'person' back into your analysis by revealing the colour and personality in the text. The person writing or speaking has put those words and phrases in the text, probably more unconsciously than consciously, to add colour to the plain words. The respondents are telling you something about themselves. They are revealing their inner thoughts and emotions. They are adding meaning to the text. That is data that you should use in your analysis rather than discarding it as merely subjective.

Use the colour and personality in the text to put the 'person' back into your results. This information is important and useful as it tells us a lot about the participants as people. Why not allow the people to come out in your results? It can help to make the reports of your research more useful and interesting by showing how people respond to the questions as people rather than as abstract figures on a chart.

## **The labyrinth of research**

The labyrinth or maze is a very good metaphor for research. Solving the labyrinth and reaching the middle is similar to solving the problems of research and producing a result.

Finding a starting point to the labyrinth is not usually a problem, since one is probably standing at the entrance.

Similarly, finding a topic for research is not usually very difficult. Topics crop up in one's work continually. The only difficulty is deciding which one to do first.

The labyrinth winds and meanders all over the place, often in circles, while one is looking for a way that leads somewhere. Some paths that open up have to be investigated to see if they lead anywhere useful.

Similarly, research will meander around the topic until one finds the opening that shows a path that might, hopefully, lead to a worthwhile result. One must follow the twists and turns to decide which ones will lead to the required result. Some of the openings will be useless but all have to be investigated to find the worthwhile ones.

The labyrinth also has many dead-ends that lead nowhere, where one has to retrace one's steps and try to find one's way back to the right path. Sometimes it will be difficult to return to known ground unless one has kept some record of the path one has followed to reach the dead end.

Similarly, research has many dead-ends which had seemed to be useful paths but then suddenly peter out to nothing. Sometimes it will be necessary to abandon a useful looking path which has proved misleading and return to an earlier strand of investigation of the literature or topic. A record of the work, as it is being done, will be useful to pinpoint a suitable re-starting point.

Sometimes the labyrinth has a hidden method of solving it. This might be a simple instruction such as "always turn left at



any junction of three paths”. If one knows the code for breaking the labyrinth it makes the solution so much easier.

Similarly, research has its method. Although the researcher may favour a particular method, sometime changing to a different one will be worthwhile. Whichever method is chosen it must suit the aims and required outcomes of the research. Selecting the right method is also important for achieving a valid and rigorous result. Floundering around without a reliable method is like trying to solve the labyrinth with no idea of what to do next.

If all goes well, eventually one will reach the centre of the labyrinth and gain the reward of a job well done. On the other hand, one might wander until one is thoroughly lost and require rescuing. It is as well to be prepared for failure and one should never be ashamed to seek rescue if one finds the solution of the labyrinth impossible.

Similarly, if the research goes well one will achieve a great result and be able to produce a journal paper or thesis. However, one should be willing to seek help if necessary. Sometimes, if the research gets bogged down, a helping hand in the way of advice from a colleague can help to sort it out and get one back on track. If all else fails the research can be abandoned and a different topic or approach tried.

Some labyrinths are much easier to solve than others. For instance, the walls of the labyrinth might simply be bushy hedges a meter high. Thus it might be possible to see other parts of the labyrinth and either spy out a possible solution or ask advice from other people who are nearer the centre.

So too, some research projects are easier than others. the ‘walls’ of the topic might be low enough to see where the research is leading or an overall view may be available that makes progress towards the end easy and steady. Such an overview will help to keep the research in line and help one to avoid going off in interesting but currently worthless directions.

## PhD Musings

I could stretch the metaphor further and suggest that having a journal paper peer reviewed or a thesis examined is like meeting the Minotaur, the deadly beast, half man half animal, at the centre of the labyrinth, but that would, perhaps, be unfair to the reviewer or examiner.

## **Cooking and serving your dissertation**

There have been many metaphors used to describe the writing of a dissertation. One of the most interesting is the metaphor of cooking a meal and serving it up to guests.

### **The purpose of the meal**

To start preparing a meal one must consider its purpose. The requirements for the meal will depend on what it is to be and what it is intended to do. For instance, organising the materials for a snack to be eaten alone is a very different task from organising and making a banquet.

So to, how a dissertation is constructed depends on its purpose. If the dissertation is for one's own pleasure then any format will do. However, if it is to be read by others, in a formal or informal manner, then some thought must be given to the layout and presentation. Having the dissertation examined for the PhD is a special case that requires special attention to everything related to it.

### **Gathering the materials**

Again, the materials to be gathered for the meal will depend on its purpose. These will vary from simple materials that can be found in the cupboard to complicated and possibly expensive materials that might have to be obtained from a special provider such as a retailer of foreign or exotic materials.

So too, the sources of the dissertation material will depend on its purpose. For any kind of dissertation special care must be taken over the selection of the material. The information that forms the basis of the dissertation must be honestly obtained and must be rigorous and valid for the purpose. The sources must be impeccable, otherwise the dissertation will not stand on a solid basis.

The amount of background material included in the dissertation will depend on the knowledge already held by the readers. If it is to be read by people familiar with the topic then a lot of the background information will be unnecessary as it will already be known to them. For a PhD dissertation the

background must be thorough and cover everything that can be found on the topic, so that the examiners can be properly informed of how the new material relates to what is already known.

### **Putting the materials together**

The meal must be prepared in the proper order. Some parts will have to be done before others. For instance, a sauce might need to be prepared early so that it can be used as a dressing at a later stage of the preparation. Also, the individual dishes making up the meal will have to be prepared in the right order and with the right timing so that everything comes together at the end and finishes at the right times.

So too, the materials going into the dissertation must be processed in the right order. Some parts produced early in the writing might influence what is written later. Usually, this means that the literature review is one of the first part written so that you, as writer, understand the background and how the new work was developed from it and relates to it. Then comes the methodology and the results. The conclusion and introduction will probably be written last as they need to refer to the completed work.

The layout of the PhD dissertation is very important, so that it lays out the background, the work done, the method used and the results claimed in their correct order. The markers will not be pleased if the results come before the methodology as they won't know how they were produced.

### **Serving up the meal**

Once the meal is ready to be eaten it must be served up. For something simple like a light snack this need not be anything more than putting it on a plate placed on a table.

For a more elaborate meal the way it is displayed is more important. The meal must be laid out attractively so that it can be admired. The guests must be able to view the presentation and select which courses they would like served to them. The serving is as important as the meal and must be carried out in a suitable manner.

So to the dissertation must be presented to the reader or examiner in the right way to achieve the desired result. A simple dissertation might be put together simply as collection of stapled pages, but a PhD dissertation needs to be formatted properly if it is not to be rejected out of hand.

Universities usually require that PhD theses be bound with a suitable material. There are also rules about line spacing, page margins and printing that must be observed. It is important to format the dissertation properly to give the right first impression to the examiners. As with a meal, the first impressions are important for the enjoyment of the finished product.

### **A caveat**

Be careful how you take the word ‘cooking’. It can mean being false and making up data or lying about the results in the dissertation. In other words, cheating. This, of course, should never happen. It’s not worth it – you are sure to be found out and disgraced, and your reputation will be ruined for ever. So don’t do it.

Once the dissertation is finished and accepted you can sit back and enjoy your just reward, and start calling yourself Doctor.

## On the eve of submission

There have been numerous times when I've been depressed during my PhD, but none so bad as now, when I am preparing to submit my thesis for examination. I have all the editing done, my Pre-Submission Seminar is arranged for the coming week and a tentative date is set for submitting my thesis, but it no longer seems worthwhile continuing on. The blackest depression of my candidature has settled on me. The black dog is on my back and I am unable to cast it off. Giving up seems the only worthwhile option.

Perhaps it's the feeling that all the interesting work is done. The work is complete: The interest has gone. The goal of producing some worthwhile results from my research and writing the thesis has been achieved, only the bureaucratic business of submission and examination remains.

I have to wonder if other PhD students go through what I am suffering now. I wonder how many give up at this time when the end is in sight. During my candidature I sometimes felt like giving up, but none of those times has been as bad as this one. Previously I was able to talk myself out of giving up. This time that doesn't seem to be working. My inner voice keeps telling me to give up and get out now so that the depression doesn't get any worse. I find it difficult to convince myself that there is any worth in carrying on.

The urge to tell my supervisor that I shall not be submitting my thesis for examination threatens to overwhelm me. I want an end to the situation: Giving up seems to be the quickest and easiest way of ridding myself of the intense feeling of depression. It is one way of escaping, there seems to be no other.

Will I continue on, submit my thesis, do any amendments the examiners want and then graduate as a 'Doctor', or will I give up? I don't know. Even the reward of being able to call myself 'Doctor', one of the main things that has kept me going for four years, no longer seems worthwhile. I have other university degrees why do I need another one, even if it is the ultimate achievement? Even though the PhD would be the culmination of

many years university study it no longer seems a worthwhile goal at which to aim. My depression now while nearing the end of my PhD makes me wonder whether, during my years of university study, I have achieved anything worthwhile. If it all ends up with me giving up in this period of depression I have to think that I probably haven't achieved much at all.

What happens next is out of my hands. Either the thesis will pass or it will fail. Either way, I find it difficult to raise any interest in the outcome. I just don't care any more. Four years of hard work and I don't care how it turns out. If I was asked at the moment what I feel looking back over the last four years I would have to say that I feel that it has all been a waste of time. The feeling of accomplishment that I would expect at this time in my candidature has deserted me. I no longer feel that I have achieved anything worthwhile.

If I can hold off giving up until after I submit my thesis for examination maybe I can hold on a little longer and get the results. To do that I will need to regain at least some interest in the results. Perhaps I can. Perhaps not. Only time will tell, and there's not much of that left in which to decide.

What can I say that will help any other students who are suffering from 'The Eve of Submission Depression'?

Try to keep your interest up. Find something to do to take your mind off the worry. Talk to someone, perhaps your supervisor, about your problem. The important thing is to do *something*. If you do nothing you will only get worse and end up giving up. For more ideas on how to cope with your depression see a previous posting of mine on *ViewPoint* called 'Coping With PhD Depression' that was posted last year and is still available at <http://researchstudents.anu.edu.au/viewpoint/depressed/>.

Good luck and hang in there. The end is near!

# **The use of metaphors in science and technology**

Metaphors are widely used in science and technology. They allow explication of new research results by comparing them with old knowledge, which may or may not be scientific.

The old knowledge might be something that is held by everyone. The new knowledge is held by a few who must make it clear to any interested others so that it can be spread throughout the scientific or technological community. Often the ideas are so new that without using metaphors it would be extremely difficult, if not impossible, to explain them.

## **How to explain a new invention**

For instance, take the situation where a new technology, such as a computer network, needs to be explained to people who have no knowledge of it. One can talk about the ‘web’ of the network, comparing it to a spider’s web, and drawing diagrams or showing the person a real spider’s web. Thus the principal involved in how the points of the network are interconnected can be made clear to anyone who has ever seen a spider’s web.

## **Using metaphors in teaching science and technology**

Once a new discovery is made known there will still be the need for the metaphors when students are taught the new knowledge. The use of the metaphors will make it easier for them to grasp the principal of the thing.

## **Why do they use metaphors in science and technology?**

Metaphors are thus ubiquitous in science and technology because they allow intricate, technical, knowledge to be passed on to people who do not yet have the vocabulary that will come with proficiency in the field.

The metaphors not only allow the knowledge to be passed on but also will help in developing the vocabulary, since many of



the words used in science and technology are directly derived from the metaphors used to illustrate the concepts.

For instance, electricity passing through a wire is compared to water flowing through a pipe when describing how it moves. The word 'flow' used to describe water moving in a pipe is also the scientific word used to describe how electricity moves through a wire. Thus in learning the metaphor the student has also learnt a scientific word.

### **Why so many metaphors in science and technology?**

Science and technology, then, are prolific users of metaphors. It's difficult to imagine any part of science or technology that doesn't use them somewhere in its explanations of what is going on.

Metaphors allow explanations to be constructed that can be understood by anyone with a little effort. If all teaching of science or technology, or spreading of information about their results, was done using only non-metaphorical scientific words there would be a lot less people who had any knowledge of what it all means, including many scientists and technologists!

## **Ethics and publishing**

Writing is an important part of all academic endeavour, particularly writing journal papers. The experience of writing such a paper is an important part of the overall learning during one's PhD. The lessons that can be learnt from it will provide a good basis for any future academic work. This posting is about a very important lessons I learnt about my attitude to publication during my PhD. The lessons I learnt are important to me because they are about myself and the way I behave in ethically difficult situations. I'm pleased to say that I was able to come out of the situation with a clear conscience and without any feeling that I had acted unethically. I now believe that I was quite correct in the way I acted.

Two of my journal activities involved me in ethical dilemmas. How I resolved them might of interest and use to others in similar situations. In such things we can't always learn from our own mistakes, sometimes it is better to learn from the way other people handle the difficult situation without causing problems to themselves or others. I hope that my experience and resolution of the problems I encountered will help other people to deal with similar situations.

After some revisions one of my journal papers was accepted with publication promised at a later date some six months ahead. During the wait for publication my research took a new turn that made the research described in the paper somewhat out of date. I then had to decide whether to withdraw the paper from publication because it was out of date or allow publication because it still had some use and interest. In the six months preceding publication I agonised over that decision. In the end I found myself unable to decide and so I allowed publication to go ahead. On publication I received some interesting and useful comments from people who had read it.

Should I have allowed publication or not? I think that that is a dilemma that other researchers must face at some time in their careers. Given that there is often anything up to twelve months or more between submission and publication, it would seem to me that there is often a case to be made that the research

is out of date at the time of publication (Dare I say 'Obsolete?'). The author then has to decide if there is justification for the publication or whether the paper should be withdrawn. Having faced this situation I know how it feels.

I had a feeling that ethically the paper should have been withdrawn. On the other hand, given the 'publish or perish' syndrome of the modern academic's position there is pressure to publish anything regardless of the ethical dilemma, even when one is still a student. In the situation I was unable to decide so allowed publication to go ahead. When I received comments after publication, I realised that the paper did have some value to the readers and the discipline. Since it had some significance to some people then publication was justified, since the dissemination of ideas and results is part of the purpose of publication. I now think that in a similar situation I would allow the paper to be published without feeling distressed about it.

Another place where some thoughts of ethics occurred was when I did some peer reviewing for a couple of journals. One of the papers I reviewed looked very interesting and was closely allied to my own work. I felt the urge to hold back the paper while I wrote one of my own on the same topic. I had the thought that if I wrote and submitted a paper of my own before reporting on the paper I might have more chance of it being accepted and I would gain precedence. Thankfully, I was able to resist the temptation and return the reviewed paper promptly to the journal. I have to wonder, though, if other authors have held back a paper they are reviewing so that they can gain precedence or so that a favoured colleague can get in first. Again, given the 'publish or perish' syndrome, publication precedence can be a very important factor in such decisions.

Since publication is so important, even to a PhD student, I have had to come to grips with the ethical problems and try my best to get my work published. Some of it has been easy but much of it has been tough going. Publication is not easy, particularly for the beginner. On the other hand, publication is a great ego boost. Seeing one's name and work in a journal makes all the work and worry worthwhile. When people send me emails about my published material then I can really begin to realise

just how much it is worth. Then I can realise that I have made a genuine contribution to knowledge in my field. More importantly, to me, is that fact that I have done it ethically and responsibly and am able to properly be proud of my contribution to my field.

The question remains: Why bother? Why not go ahead and publish regardless of any ethical considerations? The simplest answer is that it is right and fair to other people that one should be ethical in one's dealings with them. One should treat one's colleagues, and competitors, as one would like to be dealt with oneself.

But there is a further consideration. There is always the risk of being found out. If that should happen one's reputation would forever be blackened. The risk is always there. It's just not worth taking it.

If one was caught cheating then one would suffer disgrace, and possibly lose one's position and livelihood, for the reputation of the university's scholars is reflected in the university's reputation. In bringing disgrace upon oneself one is also threatening to bring disgrace upon one's university. The university could not condone nor allow that to happen and would have to take action against any offender.

On the other hand, acting ethically and correctly, in publishing or any other activity, gives one a good feeling that is its own reward. The warm feeling of a job done well is worth having for its own sake.

## Life after submission

There **is** life after submission of your thesis for examination. Although it sometimes seems like the end, there is still much to do. It is actually only a pause in the proceedings while you wait to find out what examiners' revisions are required to your thesis.

The up-side is that you have finished all the work and only have to wait for the examiners' reports.

The down-side is that you have finished all the work and only have to wait for the examiners' reports.

The fact that you have reached this point can be exhilarating or depressing, depending how you look at it.

If you look on the bright side you can see it as a great step forward towards the completion of your PhD. Once you get your examiners' reports and make any revisions required you will be able to submit the final bound copy of your thesis, graduate, and call yourself 'Doctor'. If you think like this it will support you through the waiting and revisions.

If you feel depressed because you have reached a dead point in your work – it seems like all the interesting stuff is done and only the drudgery of the revisions remains – then you need to pick yourself up and look on the bright side. Don't let yourself get down just because there seems to be nothing to do while you are waiting for the examiners' reports, find something to do to keep your mind busy.

Perhaps now would be a good time to think about your future. What are you going to do with your PhD? If you are looking for a new job or promotion, now would be a good time to start looking around for that dream job you want. Make sure that your CV is up-to-date and start sending out letters of application.

The best way to cope with the waiting for the examiners' reports is to keep busy. Now is the time to write that journal paper you have had in mind for months. Why not sign up for a conference and write a paper to present? Can you do something

to help your fellow PhD students with their research? It depends on what your interests are, but there are still plenty of things to do to fill in your time until you get the examiners' reports.

My favourite occupation is writing, so I'm spending my waiting time writing forum postings. I find them easy to do and a lot less stressful than writing journal papers. Usually they are accepted and published sooner, too, which helps to keep up the interest. Not all of them are accepted, of course, but enough are accepted to keep me writing them. It's something like journal publishing in that if one forum convenor doesn't accept them another probably will. Like journal publishing, knowledge of the field helps the acceptance rate, but they can always be sent around to different forums until someone accepts them. I usually find that I can have one a month posted, which is a lot better than my publication rate in journals!

Whatever you do, don't allow the waiting for your results to get you down. You will still need your enthusiasm for your PhD when you get the examiners' reports. You will have to do any revisions and get the final finished draft of your thesis bound and submitted to the library before you can give a sigh of relief and come to the conclusion of your PhD.

Then you can graduate and start calling yourself 'Doctor'. It will all have been worthwhile when you reach that point. You will have the reward you have worked for for four or more years. Then you will have reached the point where you can sigh with relief at a job well done.

## The PhD as rite of passage

A rite of passage is a ritual that occurs when a person changes their state in life. Examples of rites of passage are coming of age rituals, marriages and births. The PhD is just such a ritual. It marks the change from an undergraduate student to a qualified, independent researcher.

At the beginning the PhD candidate is removed from the comfortable surroundings of the undergraduate and becomes separated from the old life. Many PhD students also move away from their families and friends to a foreign country or city.

During the time of the ritual the candidates learn new skills to prepare them for their future life. They also suffer some hardships to prove their endurance and persistence. During the rite the candidates occupy an anomalous position. They are no longer what they were at the beginning but have not yet reached the point where they can occupy the new state they will be prepared for at the end.

At the end the candidate has proven that s/he is capable of independent research. At this point, a ceremony takes place to welcome the candidate back into society in his or her new role. In the case of the PhD this involves a public ceremony where people wear funny clothes and hats and make speeches. Thus public recognition is given to the candidate for passing the rite of passage and attaining a new state.

In a survey of PhD students I found that some of them described the PhD as an 'ordeal' and that they had to 'struggle' to achieve their ends. This supports the observation that the PhD is a rite of passage that has to be endured to achieve a satisfactory conclusion. It also illustrates the fact that the PhD has to be earned by passing through the rite of passage. By suffering the 'ordeal' the student learns how to overcome it and develop as a researcher.

Two other characteristics of a rite of passage are also found in the PhD. They are 'liminality' and 'communitas'.

Liminality means that the persons undergoing the rite of passage are in an in-between state, what Victor Turner calls "betwixt and between". That is they are no longer in the state

they were in before they started but have not yet reached the state in which they will be when the rite is over. The PhD students are 'liminars' because they are no longer course work students whose entire work is predefined and set in stone but are not yet qualified to be independent researchers who can proceed at their own pace in their own directions. They are moving away from one state towards another, very different state. While in transition they are neither one nor the other but in some undefined state in between.

Communitas is the fellow-feeling that arises between people undergoing the rite of passage together. This is apparent from the way that PhD students in their later years help those who are following in the years behind them, as they received help from their forebears when they were beginning students. This feeling of communitas makes present day PhD students members of a community that goes back to the first PhD students in the past and will go forward into the future as long as there are PhD students to carry it forward. The sense of belonging, the communitas, joins all the past, present and future PhD students into one community. Many PhD candidates carry this communitas over into their later lives when they maintain a friendly contact with those with whom they shared their time as PhD candidates.

Thus the PhD shows all the characteristics of a rite of passage. The isolation, change, liminality and communitas are all part of it. As well, there is a certain amount of pain and anguish in the PhD as in many rites of passage. Passing the ordeal of the rite is not easy – it's not meant to be – otherwise there would be little value in the reward won at the end of it. The reward must be earned by blood, sweat and tears – at least metaphorically if not actually.



## **Yes, there is life after PhD**

At this stage, nearing the end of my PhD candidature, I conceive research as being a process of growth, not only in the knowledge produced but also in the researcher. I believe that no-one can pursue research for any length of time without growing and developing as a person. That, I would like to think, is one of the most important features of research, that it effects the observer as well as the observed. I believe that my research has caused me to develop as a person.

I have learnt that research is a painstaking process. It must be pursued diligently and with care, as well as honestly and with an open mind. That is the only way to achieve the required level of objectivity and validity. The researcher must always have those factors in mind lest s/he succumb to the temptation to 'massage' the data to give the required answers. There can be no justification for falsity. Only complete honesty is good enough.

When I started my candidature I had a very simplistic view of research from my reading as an undergraduate. I thought that it was only necessary to observe a group of people for a short time to be able to understand their actions and motives. I imagined that most of the data would be gathered by simply sitting talking to the people and forming ideas about what motivated them. This understanding would then be used as the data for giving an account of the people involved. It came to me as something of a surprise when I had to arrange gathering my own data by planning the nature and delivery of my survey. It became plain that the planning part of data gathering is much more involved than simply asking a few people a few questions.

It came as something of a shock to me to see how often different researchers disagreed with each other. I wondered how I could ever make sense of the arguments and counter-arguments. That I eventually did so I put down to persistence and the pressure from my supervisors. It was a salutary lesson that I won't forget quickly.

However, I now realise that it is through disagreements over results and procedures that knowledge is built and tested for validity. If all researchers agreed on what is correct there would

be no way of tearing out the errors in knowledge and replacing them with better versions of the truth. The new versions of the truth may eventually also prove to be wrong and have to be replaced, but each version of the truth will, hopefully, be better and more correct than its predecessors. It is through the discussion of differences in methods and results that progress is made.

Before I started my candidature I had a vague idea that the data could be gathered, the results written up and publication take place all within a few weeks or months at the most. Now I know better. It can be years between the start of planning the data collection and the resultant journal paper seeing publication. If I wished to be cynical I might suggest that a lot of research is well out of date (Dare I say obsolete?) before it sees publication.

During the time of my candidature I have also become more able to make decisions regarding my work. At times I have had to make decisions about procedures and the writing up of results. Some of those decisions have been painful and worrying. However, it has all been a part of the learning process and I have gained from it in the long run. At times I felt myself unable to carry out my own decisions due to having to come to a compromise with my Supervisory Panel. Mostly I had to bow down to their superior knowledge about the PhD and follow their instructions. Sometimes it irked me not being able to go my own way, but I suppose that it's all been for the best.

It can be seen from the above that my research has changed me and my outlook. It has given me much to think about, and in so doing has changed my thinking about the processes and the results of research, both my own and other people's. It has also helped me understand better what actually goes on in research and how doing research affects the person doing it.

As well as a better understanding of myself as a researcher I now have a better understanding of my colleagues as researchers. I have some understanding of what motivates them and drives them to be academic researchers. In that way, as well as many others, my research has broadened my mind and my

life. Never again will I be the same person as I was when I started my candidature as a research student. That person now appears to me to have been very naïve about research and the nature of knowledge. He had little understanding of the academic world, the world of research and the world of the researcher. He has grown into a person who now has some understanding and wants more.

Undertaking the PhD has changed me. I'm not the same person as the one who started three or more years ago. I have more confidence in myself. I have proven myself -- at least to my own satisfaction -- as a researcher. I've enjoyed the process -- most of the time. True, there have been low spots, but they are all part of the process of growing up as a researcher. I learnt as much from the low spots as I did from the good times. At least, about myself. There is now no way that I could go back to being the person who started a PhD all those years ago. I'm changed too much. It was all worthwhile. I'm glad that I did it and I would do it all again.

If you enjoyed reading my book why not send me a quick message via the Feedback link on my [obooko.com](http://obooko.com) download page? I will be delighted to hear from you.

## Previous Posting

On being a PhD student. *Chat with Rellypops*. 6 August 2012.

Keeping a PhD journal. *Postgraduates on Writing*. 6 August 2012.

Nearing the end. *ViewPoint*. 17 August 2012.

Revealing the colour and personality in texts. *Chats with Rellypops*. 23 August 2012.

The labyrinth of research. *The Research Whisperer*. 2 October 2012.

Cooking and serving your dissertation. *Chat With Rellypops*. 20 November 2012.

On the eve of submission. *ViewPoint*. 20 November 2012.

The use of metaphors in science and technology. *The Teaching Tom-Tom*. 29 November 2012.

Ethics and publishing. *The Research Whisperer*. 11 December 2012.

Life after submission. *ViewPoint*. 12 December 2012.

The PhD as rite of passage. *Chat With Rellypops*. 16 January 2013.

Yes, there is life after PhD. *Chat With Rellypops*. 12 February 2013.

## About the Author

I am a (very) mature-aged PhD student in Education at The Centre for Higher Education, Learning and Teaching (CHELT) at the Australian National University, Canberra, Australia. The focus of my PhD study is the metaphors that researchers use when describing their work.

I live in Canberra, Australia, with a black cat named Dog to keep me company.

I can be contacted at [RodPitcher@australia.edu](mailto:RodPitcher@australia.edu)

My academic publications are at <http://scholar.google.com.au/citations?user=4vZSJt4AAAAJ>

My Blog is at <http://rodsbusiness.wordpress.com/>

Follow me on Twitter @Rod\_Pitcher [https://twitter.com/Rod\\_Pitcher](https://twitter.com/Rod_Pitcher) and hear about my latest publications and postings as they happen.

Follow me on Facebook at <http://www.facebook.com/rod.pitcher.9> to see my new publications as they happen.