

11

Assessing the Outcomes of Postgraduate Research

Read this chapter if you would like to have the following question addressed:

- *How should a research student measure the benefits of a research program after it has been completed and the final results have been returned?*

A research student needs to examine the outcomes of a postgraduate research program from two different perspectives:

- The formal assessment
- Professional development and enhancement.

Both of these can have a considerable impact upon the way in which the student makes use of what has been learnt from the research program.

The formal assessments that are returned to a student, as a result of a submitted thesis or dissertation, are subject to the same variability and subjectivity that are natural consequences of any peer review of a complex field of study. However, if a research student has completed the basic groundwork (i.e., publication and peer review of work in appropriate forums), prior to the submission of a thesis, then the nature of the returned thesis assessments is less likely to be a surprise. Conflicting reviews of the same work are commonplace and, sometimes, relate to a reader's individual perspective and understanding of the presented thesis. Hence, in coming to terms with the direct outcomes (reviews) of a submitted dissertation, the first lesson that a researcher often learns is the enormous difficulty associated with conveying a message from writer to reader - even when both have a mind-set derived from the same field of study.

In terms of the review process, a common practice amongst universities is to allow reviewers to:

- (i) Pass a thesis without modifications
- (ii) Pass a thesis subject to minor modifications
- (iii) Request a resubmission of the thesis after major modifications
- (iv) Unconditionally fail a thesis.

Given the length and complexity of a typical postgraduate dissertation, outcome (i) is one of the least likely to occur. Moreover, if a research student has followed a diligent path of investigation and peer review, prior to thesis assessment, then the likelihood of outcome (iv) arising should also be relatively low.

Outcomes (ii) and (iii) are common scenarios in terms of thesis assessment, and it is important that research students are prepared to analyse and respond to requests for modifications - just as they are when they submit research papers for peer review in international journals. Requests for thesis modifications are an integral part of a postgraduate research process, rather than an onerous and unreasonable burden arising as a result of the examination process. In other words, the thesis examination process is often a two-stage process and the final outcome generally arises after a modification of the originally submitted research thesis.

Thesis examination results are the direct (and expected) outcomes of a research program. However, what follows on, after a thesis has been examined and the formalities of a research program have concluded, can cause considerable concern. Many students are as perplexed by the "professional development" events that should follow the completion of a postgraduate research degree as they are by the initial contacts with the research itself. Some students ask the obvious question of:

What happens next?

and, in this chapter, some of the issues associated with this highly important question are addressed. At the core of the question is the fact that many students have devoted several years of their lives to the completion of a research program - sometimes at the cost of a significant salary or career opportunity. It is therefore appropriate that some time is expended in determining the outcomes of the research program in relation to subsequent life/career events.

The question of "*what happens next*" is really one of "*what are the outcomes of this research program and how can they be used to further my*

life or career?". In order to address this question, the typical outcomes of a successful postgraduate research program are summarised in Table 11.1.

Some of the outcomes, listed in Table 11.1, are personal but the majority are professional or career-oriented. Moreover, the attainment of personal satisfaction and self-confidence can improve a researcher's outlook on both life and career - enabling him/her to perform better than he/she may otherwise have done. It should also be noted that "development of expertise" is the last item to be listed in Table 11.1. This is intentional and the objective of doing so is to highlight that this is only one part of the potential outcomes that can be derived from a postgraduate research program. Many research students regard the development of expertise, in a particular field, as being the most significant outcome of a research program. However, this is an error of judgement, for two reasons, stemming from the fact that the developed expertise in a postgraduate research program:

- Is generally too narrow, in itself, to be a significant career advantage unless a specific industrial knowledge shortfall exists
- Tends to be divorced from commercial/industrial considerations that can swamp the effectiveness of any proposed academic methodology.

In assessing the outcomes of a research program, and planning subsequent career movement, it is therefore important that a researcher considers all the outcomes and not just those that are related to the specific project or qualification. Many research students believe that the qualification or the project can form the basis of future careers and are often disappointed to find that there is little industry enthusiasm for those skills - the end result tends to be that the research students blame the research program ("*...it was too esoteric to be of any value...*"). In reality, however, the problem is that such postgraduates have been endeavouring to sell research outcomes which have very limited value, at the expense of those that can have a significant value.

The benefits highlighted in Table 11.1 are significant from a professional development perspective. From a commercial or industrial perspective, expertise, in itself, is often inadequate as a basis for taking on a high-calibre professional employee. Expertise is generally assumed as a starting point - however, the competitive advantage of successful researchers needs to be derived from all the other outcomes of the research program. Impartiality, rigour, systematic investigative skills, project management skills, high-level writing skills, etc. are all qualities that have significant value in a commercial environment. Hence, in focussing solely on the expertise facet of postgraduate research, at the expense of the other important outcomes, research students can undermine their future careers. It is generally not expertise which has commercial value in isolation but, rather, the human skill base that is used to develop and exploit expertise - in other words, the ability to learn how to learn.

<i>Outcome</i>	<i>Rationale</i>	<i>Benefit</i>
<i>Self-fulfilment</i>	Many research students undertake a research program with the sole objective of achieving some form of self-fulfilment, through the attainment of a higher qualification or, simply, through an ability to indulge and sate their own curiosity in a particular area of interest.	The completion enables postgraduates to move on with their lives and careers with greater self-confidence
<i>Self-confidence</i>	The attainment of a higher degree can give graduates the confidence to deal with senior professionals and peers. The postgraduate degree is a symbol that the student can perform at a high level.	A postgraduate can perform better without being held back by negative thoughts about his/her ability to perform.
<i>Development of project management skills</i>	A postgraduate research program is an active learning ground for project management skills - particularly in lengthy projects that have many undefined parameters in the formative stages	Professional project managements skills are recognised as a valuable tool in many career arenas.
<i>Development of impartial analytical skills</i>	A well conducted research program is one in which the researcher has learnt to balance opinions and recognise that many issues can have a range of equally-valid solutions	Impartial analytical skills are an important tool in direct professional applications and in management
<i>Development of systematic investigative skills</i>	A good researcher should be able to form a systematic approach to problem solving in a wide range of fields - these should provide a higher likelihood of achieving the most appropriate solutions	Investigative and problem solving skills are important in all professions and in management areas
<i>Development of rigorous writing skills</i>	Good researchers are able to quickly differentiate between fact, fiction and personal opinion. This reflects in writing which is both concise and accurate.	Writing skills are vital in professional roles and well-written documents can minimise professional problems and liabilities
<i>Bench-marking against best-practice</i>	Researchers who have published internationally are accustomed to attaining world's best practice in their field	Recognised excellence at an international level can have many advantages
<i>Development of expertise</i>	A research program is designed to generate deep-level understanding in a particular field	Expertise can be used as the basis of future career positions.

Table 11.1 - Outcomes of Postgraduate Research Programs

Postgraduates, who pragmatically look back upon their research work, are often surprised by their acquired ability which enables them to learn how to learn. A common perception of successful postgraduates is that they feel that, in hindsight, the entire research program could have been completed within a fraction of the time, and with a more efficient approach. Needless to say, in viewing the world through a "retrospectoscope", it is easier to find better ways of achieving a particular end result. The reality, however, is that these students have, unknowingly, come to the realisation that the research program has taught them far more than just the technicalities of a particular field of study - in enabling them to learn how to learn, the successful research program has also enabled the postgraduates to achieve a higher sense of purpose.

