"Getting to the End": Psychological Factors Influencing Research Higher Degree Completion

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Abstract

There is increasing interest concerning progress and completion rates of postgraduate research students. This paper examines factors relating to completion and non-completion identified in Australian and international research, and takes a critical stance towards hidden or simplistic assumptions in research and policy. A review of psychological dimensions of the RHD is provided, and argument is made for recognising the complexity of factors associated with RHD non-completion and delayed completion. Accordingly, a multimodal approach and range of responses to the issue is endorsed. Finally, a research framework for investigating interventions addressing psychological factors influencing completion is proposed.

> *"After 6 years I still can't finish my PhD. I worked very well for the first 3 years and was writing up when I had to stop for nearly a year (I had cancer but it is all clear now). After getting back to writing early last year I wrote more than 80 percent of it in 6 months and my supervisor and I both thought I would be finished by November or December at the latest. I am dismayed that it is now 8 months later and I have yet to finish. Help!*
>
> - *Submitted by a student to the University of Melbourne's "Ask Counselling" website.*

Introduction

Interest in the issue of research higher degree (RHD) completion has gathered considerable momentum in higher education circles over the last few decades. Attrition rates, and time to completion, of PhD candidates have internationally become a concern of governments, universities, postgraduate student associations, and the candidates themselves (Bourke, Holbrook, Lovat & Farley, 2004). In Australia, these issues have in recent times been the subject of focused Government policy initiatives; policymakers have an immediate interest in reducing the economic costs of RHD attrition (Rapaport, 1998).

A concentrated body of research has investigated these topics. In some international studies, drop out from certain doctoral programs has been estimated as high as 50% (Johnson, Green & Kleuver, 2000). It has been argued that such a rate is financially and professionally untenable. "Failure at this point is expensive and painful for the student, discouraging for the faculty involved, and injurious to the institution's reputation," (Green, 1997, p. 57). In contrast, RHD completions provide a measurable outcome that rewards the investment of time, resources and commitment by the student, the supervising staff, and the University as a whole.

This paper examines the issues of RHD non-completion and delay. It focuses on the PhD, but includes reference to research on other doctoral or masters level research dissertations. It begins by examining factors relating to completion and non-completion identified in local and international research. It then takes a critical stance towards hidden or simplistic assumptions in research and policy on these areas of increasing interest. A review of psychological dimensions of the RHD experience is then presented, with particular focus made on the nature and effects of procrastination, which is conceived of as having cognitive and affective components that constitute it as being beyond a matter of study skills. The paper concludes with suggestions for actions, and proposes a research framework for investigation of focused interventions to address RHD completion.

Factors Associated with Completion, Non-Completion, and Delay

Whilst there has been considerable research on factors contributing to student retention in higher education (for example McInnis & James, 2004; Marks, 2007; Yorke, 2000) measures of retention have not always included full course or degree completion. Fewer studies have specifically addressed RHD students. Fewer still have actually analysed the effectiveness of responses aimed at increasing RHD completion or improving their timely completion.

There are two issues under examination here, in the context of the PhD:

- Candidate attrition during candidature, resulting in non-completion of the degree.
- A longer than normal period of candidature, even though the extended candidature results in successful completion of the degree.

Whilst distinct, these are related, and are closely linked in the literature.

Studies which have examined these issues have investigated a wide range of potential factors thought to contribute to non-completion or delayed completion, or in turn to be factors associated with successful completion. The methodology has often been in the form of post hoc surveys of those enrolled in RHD programs.

Boroda (2007) has paid close attention to how departmental and program characteristics influence completion, and Ober (2005) covered an extensive literature on describing individual student variables that lead to completion. In a wide scale research review, Latona and Browne (2001) summarised the following as factors associated with improved completion rates:

- Disciplinary differences: there were better completion rates for RHD students studying within science based disciplines than in the social sciences, arts and humanities. The most successful PhD students were young, male, and in a science field, who undertook structured research, often as part of a team. In contrast, students who dropped out were more likely to be enrolled in disciplines with traditionally higher expectations of autonomy of individual researchers.
- Student admission and enrolment characteristics: entry qualifications made a difference. Whilst overseas studies also suggest that students working full time on their degree fare better, Australian evidence was that part time students complete in an equivalent timeframe when adjusted for actual time enrolled.
- Quality of supervision: critical issues here include timely feedback from the supervisor, meeting regularly, explicit protocols of supervision, the quality of the relationship between student and supervisor, having a sense of belonging in an academic setting, and keeping the same topic and supervisor.
- Student characteristics: completers had reduced tendencies to procrastination and perfectionist behaviours.

These authors concluded that “these factors could be used to identify students at risk and develop interventions focused on dissertation completion,” (p.6).

In the USA, the Council of Graduate Schools (2009) reported on 1406 surveys returned by those who completed a doctoral program between May 2006 and August 2008. Of these, 80% indicated that financial support was a main factor in their ability to complete their doctoral program; 65% reported that mentoring/advising was key; and 57% said that family (non-financial) support was also important.

In a survey of 1797 candidates, Bourke et al. (2004) found that 51% of 698 who were able to be enrolled for four consecutive years completed, and after six years 71% had completed. The median elapsed time was 4.4 years. They found the following factors influenced completion rates and time:

- Discipline area, with again arts/humanities completion rates being less than for sciences.
- Within an institution, and notwithstanding discipline, different departmental arrangements were important, with student departure linked to lack of integration in the intellectual and social community, and issues in the organisational culture of the school.
- Quality of relationship with a principal supervisor.

Consistent with the above examples, three broad categories have been identified (McCormack, 2005) with improved completion rates and time of completion:

- Institutional and environment factors (discipline differences, sense of belonging, and clear guidelines for candidates).
- Supervision arrangements (frequency, relationships, and uninterrupted arrangements).

- Student characteristics (entry skills and qualifications, demographics – gender, age, holding a scholarship or other form of financial support – and psychological factors).

From this sort of summary framework, guidelines have been developed to assist institutions in addressing RHD attrition. For example, the Council of Graduate Schools (2008) have produced laundry lists of "promising practices" for reducing RHD attrition, including in areas of student selection and admission, mentoring and advising, financial support, program environment, research experience, and administrative processes and procedures.

However there has been little research that has investigated the effects of such practices on completion rates and timeliness. Nonetheless, the issue of RHD supervision has come into special focus in policy terms. For Colebatch (2002), Governments have been seduced into the idea that while there may be a number of factors contributing to RHD attrition, a major cause is poor supervision and support on the part of the universities. Indeed this has become a hot topic in institutional reviews, with the assertion made that the single most important factor in student decisions to continue or withdraw is the relationship with a supervisor (Lovitts & Nelson, 2000). "Success in achieving a PhD depends upon a close and effective working relationship with one's advisor and mentor," (Council of Graduate Schools, 2008). Again however, little actual evidence has been adduced to support such contentions.

An Example of Local Initiatives

A recent edition of the University of Melbourne's PhD Handbook (University of Melbourne, 2009) provides an example of the importance now given to the issue of RHD completion. It states:

> *"In many countries, universities have recognised that progress and completion rates of their research students are less than desirable and that the issues need to be addressed in the interests of the institutions, their academic staff and the research students themselves. A similar pattern is evident in Australian universities, and research conducted by the Centre for the Study of Higher Education has shown that the University of Melbourne is no exception. This research has demonstrated on the one hand that many of the factors affecting lengthy completions and attrition from higher degrees are beyond the institution's control. On the other hand, problems have been identified that the institution can clearly address."*

The PhD Handbook goes onto to enumerate the following problems which may impede progress of research students:

- lack of understanding by the student of what is expected in a research degree and from the supervisor;
- inappropriate choice of a research topic;
- inappropriate matching of supervisor and the student's research project;
- insufficient contact with, and feedback from, the supervisor, particularly in the critical early stages of the project;
- absence of clear guidelines within departments regarding access to research facilities and authorship of publications;
- a sense of intellectual and social isolation from the academic life of the department;
- differential treatment of men and women research students within the department.

In addition, a recent internal discussion paper (Slocombe & O'Brien, 2009) has addressed the topic from the perspective of the development of "student at risk" management strategies for the RHD cohort. These authors note that this cohort is diverse, often with significant external responsibilities. Further, enrolments are scattered across the year, there is generally no means to assess progress reliably over a period, and progress can be fickle due to the nature of research. They provide a comprehensive list of factors that place an RHD student at risk, broken down into salient time periods: from enrolment to confirmation, and confirmation to completion. Examples of their recommendations include:

- Mandating pre selection interviews.
- Requiring all RHD students to attend an orientation.
- Ensuring all RHD students have two supervisors.

- Introducing formal systems where regular milestones must be endorsed and documented.
- Aspiring as much as possible to continuous supervision without extended breaks.
- Introducing a process of second year confirmation (and its part time equivalent).

Whilst these vary in the degree to which they are achievable and realistic, they do provoke institutional thought and reflection.

Policy Confusion and Conceptual Complexity

But things are not as clear as they may seem. Despite all this activity, and the proliferation of advice, recommendations, guidelines, and "promising practices". there has been controversy and mixed results in the literature about actual attrition rates internationally. There has also been wide variation in completion rates reported between institutions and, as noted, across disciplines. Most importantly, there is little consensus about factors associated with non-completion or delayed completion.

Stock, Finnegan and Siegfied (2009) sought to identify factors associated with PhD program completion, and measured a wide variety of variables covering program characteristics, demographic student characteristics, and financial aid factors. The results did not provide much illumination. In fact these authors concluded that "It appears that many considerations unique to individual students and faculty that we cannot measure – such as ambition, motivation, persistence, organizational skills, the creativity of students, and interest in students' success as well as mentoring – matter more than the myriad characteristics we were able to measure," (p. 629).

Further, some attrition should be considered inevitable, and therefore is not necessarily undesirable (Rapaport, 1998). Some candidates leave to accept lucrative work opportunities, or to pursue a degree in another field, and lead productive lives elsewhere. McInnis, Hartley, Polesel & Teese (2000) have also argued that non-completion is not necessarily negative. Further they suggest that students' relationships to structures of education and work are "increasingly diverse, changeable and non-linear," (p.7) so that "Identifying single factors influencing withdrawal is risky since the research consistently demonstrates that it is rarely the case that any one factor is the cause for a given student deciding to leave," (p.1).

Similarly, Wright and Cochrane (2000) identified the difficulties of isolating single variables as reasons for poor completion rates. They stressed the interconnectedness of personal and structural considerations when viewing the problems experienced by research students. The qualities of the student, personal and individual issues other than study matters, difficulties with research, and supervision all can interconnect and contribute to such problems, with successful completion also often the product of a grouping of several qualities or characteristics.

In a forthright exposition, Colebatch (2002) outlines the paucity of evidence for simplistic accounts of RHD completion or non-completion. He cites examples where those taking longer to complete attributed the extra time more to the impact of personal commitments than anything else. Supporting the inevitability of some level of attrition and delayed completion, he presented cases where numerous candidates had been enrolled part time at some point, or suspended their studies for a period, but the average adjusted length of enrolment taking all this into account was around the standard time period. For Colebatch, "What is missing… is the students themselves… They are adults with volition and intelligence; and they make their own choices…Whether students continue with their PhD, and also the rate at which they progress, is a reflection of their own situation and orientation," (2002, p.31).

An investigation by McCormack (2005) has proposed that "the focus on broad categories of factors has tended to obscure the complex interplay of the constellation of factors that comprise a category and the meaning these factors have for individual students in their lives," (p.234). McCormack argues that today's performance driven model of higher degree research has constructed student withdrawal, non-completion or slow completion as failure, and a problem with economic and professional consequences for an institution. "The failure is often attributed to the student and internalized by the student as failure,' (p.234). But in the McCormack (2005) study, PhD students who had dropped out or delayed completion were able to "re-story" non-completion and slow completion as a positive beginning rather than a negative ending. Whilst non completers did indeed have isolation, lack of support, poor supervision, and personal and professional crises, nevertheless each negotiated contingencies, contradictions, and turning points, and found something positive in the result so had not experienced it as a failure at all. The author

explained this outcome on the basis that these students had been doing a lot of "identity work" during the course of the candidature, constructing and reconstructing a sense of self as they experienced the highs and lows of the postgraduate journey.

In short, research students take their time, or discontinue their enrolments, for all sorts of reasons, many of which have little to do with the quality of the university experience. The fact that PhD students get promoted, have babies, become consultants, or go overseas, and that they suspend or discontinue their enrolment to allow them to do this, does not mean that they, or a university, have failed. Notwithstanding this however, universities do retain a responsibility to create environments conducive to success and able to accommodate individual circumstances to a reasonable extent.

Psychological Factors in Higher Degree Research

It is not uncommon for many broad analyses of factors contributing to RHD completion or non-completion to make reference to, but not elaborate on, relevant psychological factors. For example, Latona & Browne (2001) note that "Psychological factors are to some extent outside the control of the institution, but supervisors may be able to move students through to completion if they can identify personality traits such as a tendency to procrastination," (p.7).

In an elaborate reflection, Wright and Cochrane (2000) ponder reasons behind differences in discipline completion rates: "In some fields of study in the arts… study can be perceived as being considerably more subjective and requiring exposure to judgment of elements of the student's internal world, such as their values and belief system and even ability to demonstrate and convey emotion. Such as element of personal risk and investment perhaps makes the work more intrinsically challenging to an individual's psychological equilibrium, thus bestowing the potential to affect their ability to function effectively. This may make such study more difficult for individuals who have negotiated few developmental stages in life and who may therefore tend to be less psychologically robust. Support at times of particular challenge may be helpful to such students and it might therefore be advantageous in terms of successful submission for institutions to take account of psychological processes attached to different types and levels of study in training of supervisors and in support service provision," (p.193).

Numerous writers have examined the emotional dimensions of graduate research. Vilkinas (2005) conducted in-depth interviews with those who had completed doctoral studies and found that building a support system is a key survival strategy. Other literature has underscored the emotional challenges of the RHD undertaking – especially frustrations, doubts and anxiety – and noted that courage, resilience and passion are vital for successful completion (University of Melbourne Counselling Service, 2008). It is self-evident that RHD students may experience issues that are common to all – grief stemming from bereavement or loss, relationship issues with families or partners, and the myriad of challenges that affect people in general as they move through life.

However there are special elements of the RHD experience that can trigger, or exacerbate, a range of psychological or emotional problems. Repak (20005) has described the difficult impact of factors such as lack of time, financial pressure, lack of faculty contact, excessive workload, lack of balance, and sense of incapacity to shape the local academic environment. These nevertheless coincide with motivations to pursue ideas for their own sake, and wanting to influence others or "make a difference". Writing a thesis is, simply, an isolating, time consuming process. It is not uncommon to feel it is an insurmountable task that will never be completed (Kuther, 1999).

The independence encouraged of the research process can also be a two edged sword. Self-reliance, otherwise so valuable and necessary, may undermine some students because it makes it hard for them to seek support, or to show vulnerability. This can lead to withdrawal and isolation, and result in a skewed sense of perspective. "Students appear to accept, and indeed pride themselves on being able to cope with, the exigencies of life," (Clegg, Bradley & Smith, p112). As Repak (2005) argues, "Even if support were available, most probably would not accept it. An overwhelming majority of graduate students surveyed (86%) said their primary source of strength during times of need or crisis was their inner self. As self-reliant individuals, they feel they must face their external environment and any accompanying sense of hopelessness and helplessness or feelings of isolation and frustration alone. The internal qualities which keep them pushing, pursuing, seeking, and reaching out of their realm of skill and familiarity, also make them hesitant to seek external help."

In a major research review, Green (1997) posed directly the question of the role that psychosocial factors should play in our thinking about helping students through their doctoral programs, noting that there has been little systematic research with personality variables to explain failure or lack of progress in thesis completion. Examining relevant research, she reported that the following variables predicted failure to complete, or delayed completion of, a thesis: history of separation or loss in childhood, high dependency needs, inability to plan ahead, rebellion, perfectionism, and procrastination. Of these, procrastination is the topic that has attracted the most research attention. Accordingly, it is to a review of the literature on academic procrastination than I now turn.

Procrastination

Procrastination is defined in multiple ways in the higher education literature. Yaakub (2000) defines it as letting low priority tasks get in the way of high priority ones, with a procrastinator being someone who knows what they want to do, is equipped to perform the task, is trying and planning to perform the task, but does not complete the task, or excessively delays performing the task. Johnson et al. (2000) described procrastination as the tendency to put off doing something until a future date, and suggest that one fourth of all college students experience some degree of problem arising from procrastination with direct negative academic consequences. They identified correlations between procrastination and irrational cognitions, low self-esteem, depression, anxiety and lack of organisation. Ahern & Manathunga (2004) have also suggested that procrastination is often associated with problematic anxiety.

In a major review study, Green (1997) summarised studies of procrastinators in academic contexts and reported that research has found them to be more test-anxious, depressed, pessimistic and perfectionistic, as well as having less self-efficacy, less frustration tolerance, and lower self-esteem. However she found low correlations in research between procrastination and impulsiveness, locus of control, and achievement motivation.

These results suggest procrastination includes affective (emotional) and cognitive components, rather than simply representing a deficit in study skills. Procrastination can also become a strategy to maintain self-worth – by reducing effort, procrastinators can attribute failure to lack of trying rather than incompetence. According to Green, the effects of procrastination are more marked in tasks perceived as being more competitive, ability focused, and difficult (which seems to describe accurately a doctoral dissertation). Recommendations arising from this review included group sessions for those who delay, on the basis of early identification: “If students who are likely to procrastinate could be identified early in their doctoral studies, they could be directed to such a program at the outset of their academic career or could at least be advised of the potential problems facing someone with their profile,” (Green, 1997, p.63). This is a notion echoed by Yaakub (2000).

Muszynski & Akamatsu (1991) investigated factors leading clinical psychology students to delay completion of their doctoral dissertation. They found that cognitive and affective factors related to procrastination were predictive of delays in completion. In addition, demographic and situational factors were also predictive of delay, including having a supportive advisor, finding a topic of interest, and living close to a university. They also argued for identifying those “at risk” for delays, and that the Procrastination Inventory (developed for their study) appeared to have some utility in predicting delay. They concluded that “Group sessions using cognitive restructuring, stress management, or supportive techniques may be useful in ameliorating cognitive and affective factors that cause procrastination behaviour,” (p.122).

In addition, Steel (2007) has offered a repertoire of potential interventions to overcome procrastination in four separated areas: degrees of expectancy, value attached to delayed activities, levels of sensitivity-to-delay, and delay management. The Johnson et al. (2000) study also examined the psychometric properties of the (revised) Procrastination Inventory in use with doctoral education students, and found that procrastination was negatively related to emotional but not financial support. Thus emotional support in the form of encouragement may be more effective than other incentives for the minimization of procrastination and thesis delay. They again argued for the use of the inventory in admissions and student monitoring because it has been shown to predict dissertation completion.

In one of the few studies that directly assess the impact of interventions with research students, Franek (1982) found that subjects attending four group sessions (involving psychoeducational information and

discussion of time management, negative emotions, motivational strategies, the supervisor-student relationship, and writer's block) made significantly more progress on their thesis over the eight week period of the study as compared with control. Group support was rated by participants as the most helpful component of the treatment program. Again this emphasises that delay cannot be attributed to a single trait variable; rather, students reach impasses which require individual solutions derived from a broad range of considerations, thus necessitating multimodal intervention strategies.

Suggested Ways Forward

From this broad survey of literature on RHD non-completion and delay, it is concluded that this is a complex area and individual outcomes are the result of an interplay of many and varied issues, including institutional and environmental factors, the nature of supervision, and matters related to student characteristics including the nature of individual support systems and tendencies towards procrastination. Accordingly, the following conclusions are offered:

Multifocal Approach

A range of strategies are required to address non-completion and delayed completion. The "issues" of delay and non-completion of RHD study are not amenable to simple or single solutions, and there is no consensus on what those would be anyway.

Institutional and Supervisory Arrangements

It would seem that there are structural, and supervisory initiatives that are both sensible and achievable, and which if implemented are likely to have a positive impact on the experience of RHD students (although they cannot be guaranteed to eliminate non-completion and delay, given the complexity and exigency of people's lives). The sort of actions proposed by Slocombe and O'Brien (2009) make for useful adoption or adaption according to local circumstances.

Psychologically Oriented Interventions

Procrastination and associated traits such as perfectionism are commonly associated with academic endeavour in general, and more commonly with non- completion. There is a case, as part of a range of responses, for providing screening and broad interventions to address procrastination in those individuals for whom this is likely to emerge as an issue and result in delay in completion, or non-completion.

A Research Avenue

A sketch of a proposal to undertake research to investigate the effectiveness of actions in relation to psychological factors and procrastination in particular is now provided. Interventions would include:

- Use of a screening tool such as the Procrastination Inventory as a means to allow individuals to identify their needs for assistance, in the first six months of candidature.
- Providing a series of group based workshops covering topics such time management, managing negative emotions, motivational strategies, nurturing the supervisor-student relationship, maintaining momentum, and writer's block. These would aim to create an ongoing group cohort experience, and be spaced over time to incorporate a supportive and facilitative function.

It is noted that there are complexities in research design that would need to be considered here. As noted, much of the existing research on completion, non-completion and delay has involved retrospective surveying techniques. To properly evaluate the proposed interventions, it would be desirable to establish some form of control group, but this is not easy in this domain (it would, for example, have to include procrastinators with comparable disciplinary and demographic profiles who do not receive interventions). Most particularly, the actual time needed to complete PhDs, especially for part time students, is inimical to timely reporting of results of interventions.

These factors would need to be carefully thought through, and it is beyond the scope of this paper to describe solutions to these complexities in detail. However it is envisaged that such research could focus on a relatively small cohort of subjects from up to two broad discipline fields. Indicators of effectiveness would include a variety of qualitative and quantitative measures available through interviewing, survey and self report. In order for timely results, progress would be tracked over its first eighteen months of

candidature. If found to be successful, the program of interventions could be expanded, and longitudinal research conducted to track PhD candidates through to completion over a period of years.

Conclusion

This paper argues for a recognition of the complexity of factors associated with RHD non-completion and delayed completion. Accordingly, it endorses thinking in terms of a multimodal approach and a range of responses, but also building an actual evidence base on the topic. The effectiveness of actual, focused interventions in the area of RHD completion is little researched, and it is timely for an examination of such interventions. A beginning point would include investigation of a set of interventions linked to broad psychological factors such as procrastination which have been identified in literature as relevant. The findings of such research can then inform what supports may be put in place for students' unique situations.

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