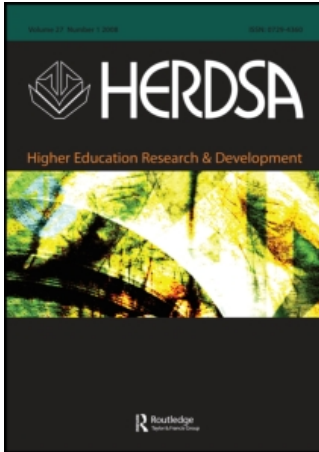


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Innovation in PhD completion: the hardy shall succeed (and be happy!)

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Innovation in PhD completion: the hardy shall succeed (and be happy!)

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What is it that makes a PhD such a difficult process, and prevents candidates from completing on time? In this paper, we propose that self-sabotaging behaviours, including overcommitting, procrastination and perfectionism, have a role to play. At Flinders University, we have developed a program in which we work with PhD students to help to reduce these behaviours and give them the strategies and attitudes they need to successfully (and happily!) complete their thesis. The program utilises cognitive-behavioural coaching, an evidence-based strategy that we claim leads to significant and long-term behavioural change. An evaluation of the program indicates that it is very successful, improving students' ability to manage their time, set specific times for writing, and show work to their supervisor regularly, and that these behaviours were associated with lower levels of stress and improved ability to complete.

Keywords: cognitive-behavioural coaching; PhD completion; PhD students; self-sabotage; stress

The secret life of the PhD student

You're sitting at your desk ready to start writing; it's 9.30 a.m. You think, "I'll just check my emails for 10 minutes and then I'll get started on my literature review." You open up your email and find there's one from your supervisor asking if your draft is ready. You quickly send it to the trash and check the next one. It's from an honours student in your department saying they can't find a particular reference and since it's your field do you know where to find it. You think, "It'll only take a few minutes, I'll just do a quick check." So you log onto to the library electronic journals. Eventually, with a sense of great satisfaction, it's found and emailed off to the grateful honours student.

It's 10.15 a.m. "Well," you think, "I may as well just get the rest of these emails cleared"; glassware not cleaned in lab yesterday – send back saying it wasn't me; astronomical society bash tonight – send back saying sorry, can't come; interesting reference from co-supervisor – send back saying thanks, and go look up reference – feel very satisfied when found, printed, stapled and put in pile with 40 other articles. It is now 11.00 a.m. "Well, it's been a busy morning, surely it's time for a cup of coffee." You meet a few friends in the coffee room and chat about the latest techniques for grafting boils to blue tongued sleepy lizards. It's 11.30 a.m. As it's only an hour until lunch you think there's not much point in trying to start the lit review now, so you organise some references and put them into Endnote. It's 12.30 p.m. and, with a sigh of relief, you head off for lunch.

At 1.30 p.m. you come back and now feel a little tired, so think 'I'll just do something a bit easy until I feel more motivated.' It's 2.30 p.m. and another PhD student knocks on the door and asks for help with calibrating her super-sensitive bio-liquid. You are really good at this so you

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help and, after all, she's helped you with Endnote in the past. After this you rush back into your office. It's 4.30 p.m. You're late, so you shut down your computer, grab your bag and rush out. Your supervisor walks past and asks you how your day was. You say, "Great – very busy, did a lot", but you have to rush now because you're late for a meeting of the Faculty Higher Degrees Completion Committee and you are its representative!

This story is, in our experience, typical of some PhD students. They're busy, but at the end of some days, they don't seem to have made much progress on their PhD. In recent years, there has been a push to get PhD students through faster, increasing the pressure on them to progress at a quicker rate. This was accelerated by the release of the Minister for Education, Training and Youth Affairs' discussion paper, *New Knowledge, New Opportunities* (Kemp, 1999b), and the policy statement, *Knowledge and Innovation* (Kemp, 1999a). Among many other developments, these papers resulted in the introduction of the Research Training Scheme (RTS). The RTS dictated how universities were to receive a proportion of their funding. Under this new system, the bulk of performance-based funding was now dependent on ensuring the timely completion of postgraduate research students (Barnacle & Usher, 2003). Coinciding with this, the whole PhD process was undergoing a transition, from the traditional model of scholarship to a newer framework, focused on research training and the development of skills (Deem & Brehony, 2000). This was to forge a closer alignment between the education system and national economic goals (Leveson, 2000).

Subsequent to these policy changes was a dramatic increase in the number of Generic Capabilities (GC) programs provided by Australian universities (Borthwick & Wissler, 2003). Although the area of GC training has been fraught with problems of inadequate definition (Gilbert et al., 2004), Borthwick and Wissler (2003) describe generic capabilities as skills desirable for a smooth transition from a degree to the workplace, but which may not be learnt during the traditional attainment of a research higher degree. The increased pressure to ensure candidates complete on time in order to receive additional funding, as well as the emphasis from the government on developing skills relevant to the workforce, saw the need for programs designed to aid completion of students' degrees, and which would also assist in their transition to the workforce (DDOGS, 1999), hence the push for GC training.

Borthwick and Wissler (2003) conducted a thorough review and analysis of GC programs in Australian universities. Their review showed that in 2003 GC programs existed in the majority of universities surveyed. The most common types of GC programs were leadership, communication, and project management, although other types of programs included self-development, stress management, and team work. Despite such programs being well liked and well attended (Borthwick & Wissler, 2003; Gilbert et al., 2004), there is little objective evidence for the effect or value of such programs to the students. This is not surprising, given the relatively short time frame in which these programs have been operating.

At Flinders University we have developed a GC program that focuses on providing skills to PhD students that will enable them to complete their PhD faster but which can also relate to various domains beyond their candidature. As part of the program, we have also implemented an evaluation strategy to determine the objective benefits of such a scheme. As a foundation for our GC program, we have drawn extensively on the literature examining factors related to timely PhD completions. Much of the research in this area has examined the effect of demographic or situational factors on completions. For example, it has been found that those in the science-based disciplines (Seagram, Gould & Pyke, 1998), studying full-time (National Centre for Education Studies, 1996), on scholarships (Seagram et al., 1998), with prior research experience (Latona & Browne, 2001) and with high-quality supervision (Dinham & Scott, 1999; Seagram et al., 1998) are more likely to finish faster.

Manathunga (2002), however, took a more psychological approach to identifying factors related to time to complete. She identified four ‘warning signs’ to indicate that students were not making progress on their PhD. These indicators include: constantly changing topic, avoiding communication with their supervisor, isolating themselves from their department and other academics, and not submitting their work for review. Ahern and Manathunga’s (2004) work extended this, discussing the concept of ‘academic procrastination’, which relates to putting off academic tasks, a behaviour commonly displayed by students who are ‘stuck’. Their research focused on ways of helping these ‘stuck’ students to get moving again. They suggested that these blocks occur in one of three domains: cognitive, affective or social, and that by investigating these blocks, supervisors can attempt to resolve the issues and improve the student’s progress.

In our research, we focus on cognitive and emotional blocks, specifically the underlying thoughts and feelings that prevent students from making progress on their PhD. As such, we have adopted a program of generic skills training that focuses specifically on developing cognitive and emotional skills for PhD students. These include programs titled: ‘The Seven Secrets of Highly Successful PhD Students’; ‘Self-sabotage: What it is and What You Can Do About it’; ‘Your PhD: The Emotional Roller Coaster’; and ‘The Life Cycle of the PhD’. One particular program, which was formulated around a variety of past evidence-based courses including cognitive-behavioural principles (e.g. Gardiner, Lovell & Williamson, 2004), was developed specifically for PhD students. The program, known as ‘Getting Your Thesis Finished: Defeating Self-sabotage Intensive Series’, has been completed by 63 students over the past 3 years. The aim of the program is to teach students the underlying cognitive strategies and attitudes needed to complete their PhD on time, reduce stress, manage their time and workload better, and generally improve their psychological hardiness and resilience. In other words, to avoid the academic procrastination and other ‘blocks’ discussed by Ahern and Manathunga (2004) and which the student in the opening vignette displays abundantly. These skills, which we term self-management skills, are designed to not only help students to complete their PhD more quickly and with less distress, but also to impact positively on their long-term career and life goals.

The particular theoretical principles that underlie the program relate to the concepts of academic procrastination, as discussed by Ahern and Manathunga (2004). Specifically, we address the idea of self-sabotage (or self-handicapping), the process of creating obstacles to your goals – whether real or imagined – so that if failure occurs you have a plausible excuse (Berglas & Jones, 1978). Martin and colleagues (2003) suggest that in competitive environments such as academia, in which a high level of performance is expected, self-sabotaging strategies are highly likely to occur. In addition, Greenberg (1985) found that people are more likely to self-handicap when the task involved is very important to them. The PhD process is a prime example of these conditions and may increase the likelihood that self-handicapping will occur throughout candidature.

Although not examined specifically in PhD students, studies have shown that up to 95% of university undergraduate students display some form of self-handicapping (Ellis & Knaus, 1977; Onwuegbuzie, 1999; Solomon & Rothblum, 1984). Self-handicapping is also associated with negative outcomes for students, such as academic underachievement (Garcia, 1995; Zuckerman, Kieffer & Knee, 1998), poorer study habits (Zuckerman et al., 1998) and poor time management strategies (Garcia, 1995). Self-handicapping in academia is likely to manifest in many different ways. From the extensive literature on the topic, we have compiled a list of self-handicapping behaviours commonly displayed by PhD students. These include: overcommitting (Koszegi, 2000), busyness (Silvera, 2000), perfectionism (Greenberg, 1985), procrastination (Ellis & Knaus, 1977; Martin et al., 2003; Onwuegbuzie, 1999; Solomon & Rothblum, 1984), disorganisation (Norem, 2001), not putting in effort (Bailis, 2001; Urdan & Midgley, 2001), and choosing performance-debilitating circumstances (Sanna & Mark, 1995). The behaviours are shown (with examples) in Table 1, and are also highlighted in the opening story.

Table 1. Self-sabotage checklist.

Self-sabotage checklist		Application to PhD students	
Behaviour	Description	Example	The alibi
<input type="checkbox"/> Overcommitting	Taking on so many things that your high priority goals suffer	A PhD student who already is heavily committed with study, a part-time job and family responsibilities accepts an offer to chair the organising committee for a conference.	I really should have finished the data analysis and I would have if I wasn't so busy with all these other things – but they are all very important.
<input type="checkbox"/> Busyness	Looking like you are very busy but, in reality, only less important things are actually getting done	The PhD student comes into the university every day, gathers lots of reading materials, attends lots of seminars and is generally very busy, but doesn't seem to be able to find time to write a draft of the first chapter for the supervisor.	I have been so busy. It's just so hard to find a quiet time to sit down and write. When I set aside some time things just come along and gobble it up. If it wasn't for that I'd have the first chapter finished by now.
<input type="checkbox"/> Perfectionism	Setting unrealistic and impossible expectations	The PhD student sets unrealistic and impossible expectations. Rather than start a draft of the literature review, the student decides that until the writing can be the best, then it is better not to start it at all.	I want this to be really good. After all, you only get one chance to do a PhD. I need to read a bit more to get it clear in my head.
<input type="checkbox"/> Procrastination	Putting off important or necessary tasks, often until the last minute	Putting off and finding excuses not to begin a project. For example, the student decides that cleaning glassware in the lab or surfing the Internet becomes far more important than doing the experiment or writing up results.	I find I work better under pressure. If I leave it to the last minute I'll put something together. If it's not the best, well, what could you expect? If I had more time I would have done better.
<input type="checkbox"/> Disorganisation	Not developing a routine or system that makes managing your time and life easier	The student is unable to find things, forgets to bring important documents to meetings, turns up to meetings at the wrong time.	If I was more organised I'd be winning Nobel prizes. It's my disorganisation not my ability.
<input type="checkbox"/> Do not put in effort	Not practising or trying very hard	The student intentionally does not practise for a seminar presentation.	If the presentation doesn't go well it's because I hadn't prepared rather than lack of ability.
<input type="checkbox"/> Choose performance-debilitating circumstances	Trying to work in a busy or unsuitable location or situation	The PhD student tries to write a complex chapter while sharing an open-plan office with three other gregarious students.	Well, if it wasn't for all the distractions I'd be much further on.

We propose that these self-handicapping behaviours are often the reasons that PhDs do not get completed on time. For example, if a student is on several committees, spends time re-organising their notes, or sets unrealistic standards, then they are unlikely to make much progress on their thesis. It is, therefore, of limited benefit to teach such students straightforward time management or goal-setting techniques without addressing the underlying, often cognitive and emotional, reasons for self-sabotage.

Cognitive-behavioural coaching: changing self-sabotaging behaviours

If self-sabotaging behaviours are a substantial reason for students not making progress in relation to their PhD, how do you go about changing these behaviours? A review of the literature suggests that self-sabotage behaviours have solid cognitive underpinnings (Kearns, Forbes, Gardiner & Marshall, submitted; Urdan & Midgley, 2001), therefore a purely behavioural intervention is unlikely to be successful (Higgins & Berglas, 1990). Getting students to perform adaptive behaviours, such as writing, is unlikely to have lasting effects if the student still has deep-seated beliefs such as 'It will never be good enough'. As such, we have based our approach on the principles of cognitive-behaviour therapy (CBT) (Beck, 1976; Ellis, 1994). The theory behind CBT is that all feelings are determined by our thoughts, not, as we often suppose, by the situation in which we find ourselves. Our feelings, in turn, determine how we behave. If our thoughts are inaccurate or unhelpful, our feelings and behaviour will also be less than optimal. Therefore, CBT attempts to change underlying thoughts in order to alter resulting behaviours.

Cognitive-behaviour therapy has been generally shown to be successful at treating a range of disorders (Butler & Booth, 1991; Clark et al., 1994) but is typically more suited to clinical rather than non-clinical populations. Hence, cognitive-behaviour coaching (CBC) applies the principles and techniques of CBT (such as homework exercises, planning and reality testing) to non-clinical populations (Neenan & Palmer, 2001). The goal of CBC, therefore, is to assist people to improve performance and reduce self-sabotaging behaviours in order to achieve their goals. A study by Kearns, Forbes and Gardiner (2007) has already shown a CBC approach to be useful at reducing levels of self-handicapping in a university setting.

Getting your thesis finished: defeating self-sabotage

The 'Getting Your Thesis Finished: Defeating Self-sabotage' program primarily uses CBC to effect attitudinal and behavioural change in students in relation to their study. Additionally, principles of time and stress management, work-life balance and good study habits are also discussed and utilised so that, as well as challenging inaccurate thinking, we provide students with adaptive behaviours to substitute in place of their self-handicapping behaviours. The program incorporates spaced-learning principles (e.g. holding shorter sessions spread out over a longer period of time), which are essential for attitudinal change and skill development (e.g. Manathunga & Wissler, 2003). Students attend an initial 3-hour session, followed by weekly 2-hour sessions and, 4 weeks later, a final 2-hour session. In total, students attend for 15 hours. The purpose of the program is for students to:

- Identify patterns of behaviour that reduce their effectiveness and productivity in relation to progress on their PhD.
- Understand and challenge the underlying attitudes and beliefs that lead to unproductive behaviours.
- Identify and challenge beliefs related to their PhD that lead to unrealistic expectations and, consequently, higher levels of distress.
- Set measurable, attainable goals for their PhD, with regular review of obstacles that prevent progress.

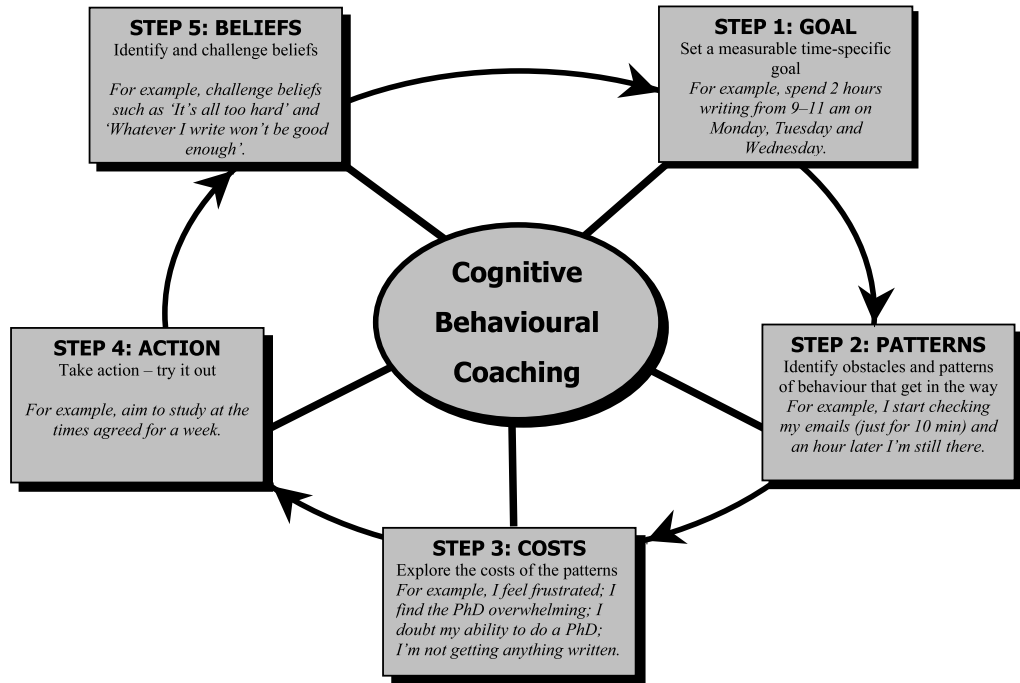


Figure 1. Cognitive-behavioural coaching model.

- Learn and utilise necessary skills (e.g. time management, problem solving and goal setting) to progress their PhD.

The design of our workshop series, which is based on a CBC approach, and was developed and refined by the authors over the past 2 years, includes the steps below (which are also summarised in Figure 1).

- (1) *Set a measurable time-specific goal*: Students are asked to identify the next specific, practical, important thing they could be working on in relation to completing their PhD (e.g. write first draft of Chapter 3). This enables the student to identify and focus on a clear, measurable goal. But, more importantly, identifying the 'next step' as a behavioural task is what eventually allows access to inaccurate and self-handicapping thoughts that prevent many students who are stuck from making progress.

This more general goal is then reduced to a time-specific, measurable goal such as: Over the next week, I will begin to write a review of the literature on the second toe of the native, hibernating blue-tongued, sleepy lizard. Specific times are then put against this goal such as: Monday 9–11 a.m. and 3–5 p.m.; Tuesday 9 a.m.–12 p.m.; Wednesday 2–5 p.m.; Thursday n/a; Friday 9 a.m.–1 p.m. In setting up a schedule like this, we ask students to take into account all their other commitments. Some students in our workshops realise they have very little time of decent quality left for study. One student we worked with discovered that when she took into account everything she was doing, she only had 2 hours a week left in which to do her PhD: between 9 and 11 on a Monday night!

This process of non-judgementally examining students' priorities (including family, health, mountain bike riding competitions etc.) has the effect of distinguishing real study hours from what we have termed 'phantom study hours'. Phantom hours are the hours that

you think you might or could study but rarely do (in our experience, about 50–60 hours for most full-time PhD students). Real hours are the hours that you could realistically do good quality work on your PhD (in our experience, about 20–25 hours for most full-time PhD students).

- (2) *Patterns*: Once a clear goal has been set, we work with students to help them understand what patterns are likely to get in the way of them sticking to their plan. For example, they might identify that come Monday morning at 9 a.m. they are likely to procrastinate by answering emails, supposedly for 10–15 minutes, but find themselves still at the Inbox 1.5 hours later. With assistance, most students are able to identify patterns of self-sabotaging behaviour (as described in Table 1, self-sabotage checklist) that stop them from achieving their stated goals. Identifying these patterns is a key step in the CBC process.
- (3) *Costs*: We generally find it very useful for students to have the costs of their patterns made clear. This is because students often don't link the consequences of their actions with the choices they are making on a day-to-day basis. In our workshops, we refer to this as 'the credit card philosophy of life'. We buy on credit each day (e.g. by procrastinating instead of pushing through a difficult piece of work) and then are upset or confused when the bill comes in (e.g. it's 6 years later and the thesis isn't finished). We try, in a non-judgemental way, to link behavioural patterns with consequences. Most students are quite surprised, and enlightened, when we show them how a clear, logical pattern of behaviour – rather than chance or luck – explains much of their current position in life.
- (4) *Action*: The workshop participants then need an opportunity to attempt to put their plan into action. This is why having the program spaced out over time is so important. It gives students time to try out new behaviours in their day-to-day activities. These 'homework' exercises are a key feature of CBT- and CBC-based programs.
- (5) *Identifying and challenging beliefs*: When students come back to the next session they invariably report a whole range of responses. We find that very few students are able to accomplish their entire plan. What we are interested in, however, is not how many hours they have studied, but the thoughts, worries and doubts that were elicited by 'forcing' themselves to stick to the plan. We ask students to keep a record of what goes through their heads as they attempt to work on the difficult part of their thesis. We find that most students' thinking relates to doubts about their competence or ability, or other negative, personal attributions. When we follow a student's thought processes through, it is always very clear why they have been having difficulty in progressing their work.

Using cognitive behavioural techniques (and the reactions and interplay of the group), we then work with each student to challenge their particular underlying inaccurate beliefs. Once we have challenged students' beliefs, we go back to step 1 and set up the next time-specific goal. This is repeated each week for the next 5 weeks, with the final week containing a longer-term plan. Nearly all students attending the course report that work on their thesis becomes much easier, with many saying that they have done more work in the past 6 weeks than the past 6 months. Following on from the course, we stay in contact with students through email and, by specific request, in person.

Are we making a difference? evaluation of the program

An evaluation of the 'Defeating Self-sabotage' course was conducted to assess its effect on behaviours considered important for successful completion, specifically students' relationship

with their supervisor, time management, planning, writing, realistic expectations and getting help (Dinham & Scott, 1999; Kearns & Gardiner, 2006; Seagram et al., 1998). Questionnaires requested participants' perceptions of their abilities in each of these areas, both before and after completing the course. Such items included 'How well do you feel you manage your time?', 'How realistic do you think your expectations are relating to your PhD?', and 'Has attending the course reduced your stress related to your PhD?' Separate responses were given for before and after judgements. In addition, three items assessing students' perceptions of the course were asked, including 'Do you feel attending the course has enhanced your ability to complete your PhD?' Responses for all questions were made on 7-point Likert scales with anchors varying according to question, with higher scores indicating more positive outcomes. Comments were also solicited on students' relationship with their supervisor, time management abilities, and overall perceptions of the course. (The full copy of the questionnaire is available from the authors.) Questionnaires were mailed out to 34 randomly selected participants, between 6 and 18 months after they had completed the course. Twenty-six responses were received, giving a response rate of 76%.

Paired-samples *t*-tests indicated that the course was generally perceived as successful, with responses for most items improving after the course (see Table 2 for statistical tests).

Table 2. Results of contrasting 'before' with 'after' judgements of the PhD experience, correlations between key behaviours (after completing the course) and perceptions of course effectiveness at reducing stress and enhancing ability to complete.

Item	Mean differences			Correlations	
	Mean difference between before and after score	<i>t</i> ¹	<i>p</i>	Reducing stress	Ability to complete
Do you meet regularly with your supervisor?	-0.462	-1.466	0.155	-0.319	0.090
How frequently do you meet with your supervisor?	-0.115	-1.030	0.313	-0.377*	-0.019
How satisfied are you with the productivity of these meetings?	-0.269	-1.231	0.230	-0.125	0.305
How would you rate your relationship with your supervisor?	-0.269	-1.318	0.199	0.189	-0.005
How well do you feel you manage your time?	-1.560	-8.117	<0.001	0.407**	0.417**
Do you allocate specific times regularly for working on your PhD?	-1.481	-4.710	<0.001	0.447**	0.428**
If so, do you stick to these times?	-1.360	-7.141	<0.001	0.528**	0.548**
Do you have a specific plan for writing up your thesis?	-1.769	-6.753	<0.001	0.387*	0.452**
Please rate your confidence in your ability to stick to your plan if you have one.	-1.360	-5.571	<0.001	0.452**	0.572**
Do you show your written work to your supervisor regularly?	-1.250	-3.273	<0.003	0.007	0.196
How realistic do you think your expectations are relating to your PhD?	-1.519	-6.822	<0.001	0.475**	0.445**
How easy do you find it to ask for help when you need it?	-1.269	-4.818	<0.001	0.277	0.221

p* < 0.01; *p* < 0.05.

¹d.f., 23-25

Students reported significantly increased:

- time management skills;
- specific, regular times spent on the PhDs;
- specific plan for writing;
- regularity in showing written work to their supervisor;
- realism in their expectations of self; and
- ability to ask for help.

Comments from the participants reflected the specific, beneficial aspects of the course:

During the course, we experimented with the time of day when I do thesis work...I am now in the flow of working solidly in 2-hour blocks, which then increases dramatically the amount of writing...

CBT (Cognitive Behavioural Training) for 'I think I am dumb/stupid' and understanding procrastination were the most helpful things.

Interestingly, the only items for which improvement did not appear were those questions tapping the students' perceptions of their relationship with their supervisor. It appears then, that students were able to improve those factors that they had control over, such as time management and planning, but this was less so with those factors dependent on another person (such as the relationship with their supervisor). This is reflected in some of the comments made:

I am much more aware now of why I might procrastinate. I realised that I needed help and wasn't getting what I needed from my supervisor, so have organised this from another source and made more progress in the last 2 months than the whole rest of the year.

Participants generally perceived the course as very useful. Items assessing how effective the course was at reducing the time taken to complete their PhD ($M = 5.15 \pm 1.52$ SD), reducing stress related to their PhD ($M = 5.68 \pm 1.07$ SD), and how effective the course was at enhancing their ability to complete their PhD ($M = 5.96 \pm 1.08$ SD) all showed significant improvements. This is again reflected in a number of the comments made.

Now, I have more confidence that I will finish my thesis on time.

If I am able to attribute completing a decent PhD to any key source, this is it.

I don't think without having done the course I would ever complete.

Furthermore, how effective the participants found the course to be at reducing stress levels and at enhancing their ability to complete was related to their behaviours after completing the course (see Table 2 for correlation coefficients). For example, those students who perceived they managed their time well, had a specific plan for writing and had realistic expectations also reported that the course had enhanced their ability to complete on time and had reduced their stress levels. Again, this was mostly found only for those factors not dependent on the supervisor. However, the more frequently students reported that they met with their supervisor, the greater the reduction in stress. Table 3 summarises the relationship between behaviours related to completing a PhD and perceptions of reduced stress and improved ability to complete on time.

Discussion

A number of influences, ranging from the introduction of the Research Training Scheme to a greater interest in the field of generic capabilities, have led to an increase in the range of development programs and activities being offered to PhD students. Borthwick and Wissler (2003) highlighted the wide range of GC programs that are in operation across Australian universities. The majority of these programs are skills-based, focused on providing PhD students with the skills and abilities necessary for completion of their study and for their future working life.

Table 3. Summary of the relationship between behaviours and perceptions of reduced stress and ability to complete.

Behaviour	Reduces stress	Improves ability to complete
Meeting frequently with supervisor	✓	✗
Managing time well	✓	✓
Allocating specific times for working on PhD	✓	✓
Sticking to specific times for working on PhD	✓	✓
Having a specific plan for writing up thesis	✓	✓
Feeling confident in studying to a plan for PhD	✓	✓

However, as Manathunga (2002) points out in a paper dealing with academic procrastination in research students, there are a number of factors that affect student progress. She proposes three factors: cognitive, emotional and social. Most current GC programs deal with the intellectual, rather than the emotional, processes of a research higher degree. Although there has been some investigation into the role of emotion in research study (Glatthorn, 1998; Styles & Radloff, 2000), this has not translated into programs dealing specifically with the emotional aspects of PhD study.

The current study examines the impact of the workshop 'Getting Your Thesis Finished: Defeating Self-sabotage', a program aimed specifically at addressing the emotional aspects of PhD study by targeting underlying cognitions and beliefs that hamper a student's progress. Participants reported a number of positive results, including improved time management skills, planning, help-seeking and setting more realistic expectations. Significantly, they also believed the course was useful for reducing the time they would take to complete their PhD, reducing stress, and enhancing their ability to complete. These beliefs were correlated with how well they were able to implement the skills learnt during the course.

These findings show that although PhD students may fall victim to self-handicapping behaviours, such as procrastination (Ahern & Manathunga, 2004; Martin et al., 2003; Onwuegbuzie, 1999; Solomon & Rothblum, 1984) and disorganisation (Norem, 2001), they can be taught skills to overcome them. Although the expectation of high achievement, coupled with personal importance of the thesis to PhD students during candidature, is likely to increase the chances that self-sabotaging behaviours will be displayed (Greenberg, 1985; Martin et al., 2003), this does not need to be the case. Students attending the workshop were made aware of specific types of self-handicapping behaviours and were taught adaptive strategies that, when implemented, resulted in happier and more productive PhD candidates.

As a result of the 'Defeating Self-sabotage' workshop, students reported improvements in areas such as time management, planning, and asking for help. These types of self-management skills are necessary for PhD students, especially given the 'warning signs' of self-handicapping behaviour in PhD students highlighted by Manathunga (2002), which include avoidance of supervisors and failure to present drafts for feedback.

The use of CBC throughout the workshop enabled participants to recognise their destructive thought patterns, and to subsequently implement beneficial self-management skills. As a result, participants felt less stressed and better equipped to complete their PhD. This finding may have important implications regarding the time taken to complete a PhD. Students who are equipped with the skills necessary to overcome the pitfalls associated with self-sabotaging behaviours are likely to be more effective and therefore complete faster than fellow candidates lacking self-management skills. However, future studies would need to test this contention.

Additionally, it was found that the ability of participants to implement the skills they learned was correlated with positive thoughts regarding their thesis. A possible explanation for

this relationship is that as self-management skills replaced self-sabotaging behaviour, students found they were able to make progress on their thesis and, therefore, felt more optimistic about their candidature. These findings are consistent with the observation made by Ahern and Manathunga (2004) that cognitive, affective and social aspects must be addressed in order to overcome behaviours associated with academic procrastination. In essence, by addressing emotional issues such as anxiety, fear of failure, perfectionism and procrastination, participants felt they were able to improve specific behaviours and felt more confident about their ability to complete. The implication of this finding is that programs that aim to develop generic capabilities and increase more timely completions might be strengthened by incorporating elements that focus on cognitive factors.

Interestingly, our results showed that those factors relating to the student's relationship with their supervisor (such as frequency and productiveness of meetings) did not change over the course of the workshop. This suggests that even students who have learned to manage their time and candidature better may still have difficulties in their supervisory relationship. This means that, consistent with previous literature, the supervisor plays a vital role in the effectiveness of the student-supervisor relationship. Many researchers have highlighted some key features of good supervision, which include frequent meetings, timely feedback and open negotiation of responsibilities (Latona & Browne, 2001; Seagram et al., 1998), and it seems likely that supervisors will need to take a leading role in ensuring these things happen. It might be useful to include findings such as this in supervisory training programs to highlight the importance of supervisors acting proactively.

Furthermore, the finding related to supervision may indicate supervisors' lack of understanding of the self-sabotaging behaviours employed by students and strategies that might be implemented to reduce them. For instance, if a supervisor was aware that their student procrastinated, they might be more insistent upon seeing regular drafts, to encourage a more consistent flow of work. Manathunga (2002) suggests that making an effort to identify whether students are advancing in their research is a hallmark of an effective supervisor. Supervisors are in a key position to assist students with implementing strategies designed to defeat self-sabotage; therefore, our study highlights the importance of raising the general awareness of the existence of self-sabotage, particularly amongst PhD supervisors.

Summary

This study investigated an innovative approach to improving PhD completions, and the results indicate that participants developed useful skills and felt more positive about their study. Future investigations should determine whether these benefits translate into more timely completions. A study examining the effect of such programs on actual time taken to complete (rather than estimated time, as in the present study) would provide strong evidence of the merits of programs dealing with emotional factors. It is also clear that further research into the role of the supervisor in dealing with emotional factors is required. Future studies could examine whether including information about self-sabotaging behaviours and the emotional factors involved in research study, in supervisory development programs would lead to additional benefits for students.

In conclusion, this study appears to support what most supervisors probably experience – that it is the hardy who flourish when completing a PhD. Hopefully, we now have some small insight into building hardiness in those who do not naturally possess it – so that the secret and painful life of a PhD student can be brought to an end!

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