

## **PART II**

# **THE SUPERVISORY PROCESS**

## 6 PRELIMINARY TASKS IN RESEARCH SUPERVISION

### 6.1 Overview

A novice research supervisor may be in a fortunate position where a research group leader decides to allocate one of his/her own students and projects to the novice to supervise. In these circumstances, some of the preliminary work of the supervisory process has already been completed. For most novice supervisors, however, they will need to deal with the basic tasks of:

- Definition/funding of research projects
- Scholarship funding
- Research student recruitment
- Research candidature applications.

Although these are primarily bureaucratic/administrative processes, the reality is that they can end up consuming almost as much time as the academic aspects of the supervision. It is therefore important to examine the key factors that need to be considered in undertaking the basic initiating steps in the supervision, so they might be tackled in the most efficient manner.

## 6.2 Definition/Funding of Research Projects

Experienced, senior academics, with established research track records and reputations, may be in a position where they are constantly approached by final-year undergraduate students who wish to undertake a postgraduate research program with them. Additionally, a senior academic will have an established program of research and an existing research team that has well defined areas of research. For those academics, the initial tasks associated with initiating a supervision are generally related to filtering of applicants, and deciding which ones will be the best fit for the research group.

For a novice supervisor, on the other hand, the onus is reversed and it is often the case that the novice has to make a value-proposition to attract a suitable postgraduate student. There are two possible options. The first, and simplest (but least strategic), is to allow a potential research student the luxury of defining his/her own research project. If the student is self-funded (i.e., has his/her own scholarship), and there are no significant physical resource requirements, then one can let the student build up some inertia in the chosen specialization, with the hope of using these research outcomes as the basis for future funding applications. The disadvantage of this approach is that a research student can potentially drive research activities in any self-preferred direction – and the nuances of that direction may not be compatible with what the supervisor sees as a long-term viable program of activity.

The second (more strategic) approach is to predefine the research project and thereby form the basis of a longer-term strategy for the supervisor to build a team. This, in turn, may involve funding of equipment, technical support, etc.

Sometimes, a novice supervisor will be allowed to build up a research activity within the research grouping of a more senior academic. This enables the novice to ride on the coat-tails of the senior academic and have a reasonable chance of securing competitive research funding by leveraging off the senior researcher's track record. However, for those who wish to go it alone, the task of building up research activity as a bootstrap operation is onerous. In order to be successful in securing competitive research funding from various national/regional or benefactorial funding agencies, one generally has to have a substantial track record. In order to establish a track record, one needs to have funds, so there is a circular problem to be tackled.

Universities often have competitive, internal funding mechanisms to support novice researchers in building up an area of research, through

provision of minor equipment/support funding and potentially scholarship funds for postgraduate researchers.

Regardless of the starting point, it becomes evident that a novice cannot simply start the process of research supervision on a whim. Time and planning are required in order to systematically develop an area of investigation which can be resourced. It is also grossly unfair (if not unethical) to potential research students to have them commence their research program in the knowledge that there are insufficient resources available to complete that work.

In understanding the funding requirements for the project, a novice supervisor needs to be familiar with the overall corporate governance of the university. For example, it would be naive for a supervisor to believe that all of a university's resources are freely available for use, simply because they already exist and have been paid for by the university. In particular, an institution (or even a faculty or department) may run various operational units as cost centers, and each of these cost centers may charge for services and resources. For example, if a supervisor determines that a postgraduate research program will require the use of electron microscopy facilities, medical imaging facilities or technical workshops, then the supervisor needs to determine how the use of these facilities is costed and charged.

Sometimes, institutions impose corporate charges even on the provision of basic facilities. For example, an institution may charge for items including:

- Recruitment costs if a graduate student position is to be advertised
- Information technology (IT) and support
- Office space, printing and stationery costs for the research student
- Library support
- Purchase of journals from other institutions
- Cost of publishing findings in publication-fee-based journals.

A supervisor needs to determine what these charges are and how they will be funded in the context of any proposed research program.

In addition to these charges, it may be necessary for a research student to attend national/international conferences or other functions, and so travel costs need to be considered. Even if a research student is asked to travel from the university to local destinations (e.g., from a university campus to a teaching hospital), then it may be necessary to provide reimbursements for mileage/car expenses or cab fares.

One useful approach to dealing with these issues is to prepare a table, such as the one shown in Table 6.1, in order to ensure that all the key costing/resourcing elements are included. This can then be discussed with departmental heads or other senior colleagues to ensure that it comprehensively covers the requirements of the project.

<i>Funding Requirement</i>	<i>Specific Items</i>	<i>Cost</i>	<i>Source</i>
Project Specific	<ul style="list-style-type: none"> <li>• Scholarship</li> <li>• Equipment Item 1</li> <li>• Equipment Item 2</li> <li>• Technical Support</li> </ul>	<ul style="list-style-type: none"> <li>• \$90,000</li> <li>• \$8,000</li> <li>• \$12,000</li> <li>• \$23,000</li> </ul>	University Seed Funding Grant
Project Support	<ul style="list-style-type: none"> <li>• 120 Hours Use of Electron Microscopy Facility</li> </ul>	<ul style="list-style-type: none"> <li>• \$12,000</li> </ul>	Faculty Funds
Corporate Costs	<ul style="list-style-type: none"> <li>• Recruitment</li> <li>• IT</li> <li>• Office Space</li> <li>• Stationery and IT Sundries</li> <li>• Library</li> <li>• Publications</li> </ul>	<ul style="list-style-type: none"> <li>• \$18,000</li> </ul>	Department Funds
Travel Costs	<ul style="list-style-type: none"> <li>• Conference</li> <li>• Local Travel</li> </ul>	<ul style="list-style-type: none"> <li>• \$6000</li> <li>• \$2000</li> </ul>	Departmental Travel Budget
Total Costs		\$171,000	

*Table 6.1 – Example of Costing for Postgraduate Research Project*

In addition to funding, there are other issues that need to be considered in planning a postgraduate research program. One of these is consideration of the ethics requirements of the project, in the event that it involves human or animal experimentation. A research supervisor should speak with experts in the field, or with those charged with ethics approvals in order to get an insight into whether the project is viable from an ethics perspective – *before* commencing the project – not after a project has commenced, when it becomes apparent that ethics obstacles may be insurmountable.

Additionally, in defining the project, and in the context of ethics approvals, a supervisor may need to determine if a research student is

required to obtain certification from an accredited training provider in order to conduct the research. If this is the case, then the cost of ethics training/certification may also need to be included in the project costing/funding.

There are numerous other issues which the potential supervisor will also need to consider. Some of these may be basic, practical ones that can halt the entire program if not considered from the outset. A good example is the availability of specialist equipment or technical support. If a unique facility/resource is required for the research student, and the facility is unavailable (e.g., because it is being renovated, reconstructed or fully-booked out to other projects), then this could completely negate any chance of the student completing his/her research program.

To summarize – a relatively common mistake that novice supervisors make, in the enthusiasm to start their project, is not to clearly identify the costs and funding sources for the research. Sometimes, there is an assumption that the money will simply be provided by the university and often this is not the case. The starting point, therefore, is to ensure that the project:

- Is clearly defined
- All the costs are identified
- The funding sources and resources are identified and preferably locked-in.

## 6.3 Scholarship Funding

### 6.3.1 General Issues

Students undertaking postgraduate research degrees are adults, many of whom will have adult responsibilities, including families, rent, mortgages, car expenses, and so on. Those that don't have families when they commence their research may choose to do so at some point during the research program. In general, therefore, keeping in mind the age of those undertaking research, it is unreasonable to expect postgraduates to simply support themselves financially for several years or more via external means.

For these reasons, in many universities around the world, postgraduate research programs are linked either directly or indirectly to scholarship funding – particularly for studies undertaken at a Doctoral level. Some universities avoid taking in research candidates without scholarship funding, because the likelihood of successful completion is diminished when postgraduates need to earn a supporting income from external sources.

Postgraduate research scholarship funding can arise from numerous sources:

- In some countries, scholarship funding is awarded by national/regional governments to institutions based upon their overall research performance from preceding years
- In other countries, the funding is provided as part of a university's normal, recurrent funding
- Some institutions use income from student fees or endowments to fund research scholarships, and others use commercial income
- When universities enter into collaborative research programs with partner organizations (e.g., industry) it is also common for the collaborative project budget to include funding for postgraduate research students to work on nominated projects.

In keeping with other research funding schemes, postgraduate scholarships tend to be linked directly to either personal or institutional academic achievement. In the case of individuals applying for scholarships, this often occurs through a formula that recognizes various subject results realized during undergraduate studies. Additional consideration may be given to academic awards; published research papers and conference proceedings, or other postgraduate coursework studies.

Each national/regional and internal university scholarship system has its own characteristics and weightings but the underlying truth of the matter is

that there are far fewer scholarships than there are applicants.

Formula-based scholarship awards have the advantage of being straightforward to administer and, for students all emanating from the same undergraduate programs, provide a reasonably objective decision-making process. The downside is that the process is very mechanistic and often disadvantages international student who come from different educational systems which:

- Awards marks on a different basis
- Use different benchmarks for academic grades or degree rankings – for example, some institutions may only award a single first-class honors degree each year – other institutions may award many.

There is also the commonly raised issue that the scholarship system rewards those with strengths in rote learning, who can achieve high undergraduate grades, even when their capacity to innovate or act as free-thinkers – important characteristics for a researcher - is limited.

In some cases, university faculties, departments, research institutes or centers award their own scholarships, and these may provide a greater degree of latitude in the selection process.

The end result, however, is that only a small proportion of potential postgraduate research applicants qualify for research scholarship funding. This means that a research supervisor either has to accept those who have qualified for scholarships, or else find a separate funding source for a student who does not have scholarship funding, but which the supervisor feels may have particularly useful attributes for the intended research program.

### 6.3.2 Scholarships Arising from Collaborative Research Programs

When postgraduate research funding is part of a larger collaborative program with an external partner (i.e., commercial or external research partner organization), then numerous additional challenges arise:

- The external partner may insist on being an arbiter (or even final arbiter) on the appointment of a research candidate for scholarship funding

- The preferences of the external partner may clash with university research candidature entry requirements or the preferences of the supervisor
- The larger research program may have a contractually binding intellectual property (IP) distribution which is imposed upon the postgraduate student, should he/she choose to accept the scholarship
- The larger research program may have contractual confidentiality requirements which are imposed upon both the supervisor and the research student – and which will restrict the ability to publish outcomes.

None of these are straightforward problems to resolve, and each requires – on the part of the supervisor – a level of maturity and capacity to negotiate when disagreements/disputes arise. It also requires a level of strength on the part of the supervisor to ensure that he/she does not negotiate away basic requirements of the postgraduate research program that would jeopardize its completion. For example, a collaboration agreement may have confidentiality requirements which are such that a student would not be permitted to submit a dissertation to external examiners – such a constraint would be untenable from the university's perspective.

A postgraduate research student, accepting an offer of a scholarship which has conditions that are not normally associated with a research degree (i.e., confidentiality, intellectual property distribution, etc.), should be cautioned to seek independent, professional (legal) advice before signing an acceptance. If, for example, a research student has aspirations of creating a start-up company at the completion of the research program, then an IP agreement signed at the beginning could preclude the use of many of the elements and knowledge developed during the course of that program. Importantly, a research student needs to be cautioned that a university's legal representatives, who may negotiate the terms of a postgraduate scholarship with an external partner, are there to negotiate in the interests of the university – and not necessarily the research student. The student therefore needs to take advice from independent legal sources.

### 6.3.3 Other Issues

In some nations and institutions, scholarship funding for postgraduate research has a special legal status that is distinctly different from a conventional salary. For example, some countries may deem that university research scholarships are exempt from taxation. More generally, however, national, regional or institutional guidelines will distinguish between the payment of a research scholarship and the payment of an employee salary. The distinctions between scholarships and salaries generally lead to restrictions in the sorts of activities that a research student can undertake while on a scholarship.

A research supervisor therefore needs to be fully aware of the restrictions that apply to the management (i.e., supervision) of a research student relative to the management of other academic staff. Typical restrictions may include the following:

- A student on a research scholarship may not be permitted to take part in day-to-day academic work (e.g., teaching, grading of papers, etc.) unless an additional contract payment is made
- A research supervisor may not have the authority to compel a research student to attend the institution during particular hours (e.g., 9am – 5pm)
- A research supervisor may not have the authority to compel a research student to undertake any extraneous university activities (e.g., assisting in experimentation or equipment set up) beyond what is specifically related to the postgraduate research program
- A research student may have no intrinsic entitlement to annual leave/vacation or paid sick-leave entitlements.

## 6.4 Student Recruitment

### 6.4.1 General Issues

There are a wide range of pathways which may bring a potential research student and supervisor together for the purposes of a postgraduate research program. These include:

- A research student, who is familiar with the supervisor and his/her work, elects to work with that supervisor after having been awarded scholarship funding
- An international student, who has never physically met the supervisor, has notionally agreed to work with him/her in the event that they are awarded scholarship funding
- A research supervisor, using funding from a collaborative research program, is part of a decision-making committee that interviews potential research students and makes a selection as would be the case for a research employee
- A research supervisor is awarded a competitive research grant, which includes scholarship funding, to allocate, at his/her discretion, to an eligible student, provided that institutional selection criteria are met.

There are numerous other possibilities, but even the few listed above suggest that the bringing together of supervisor and student can occur:

- At the initiative of the student, and based upon his/her ability to attract competitive scholarship funding in his/her own right
- At the initiative of the supervisor, based upon funding that he/she has derived from some research funding mechanism.

The former possibility is the classical, academic connection that takes place as a result of negotiations and camaraderie between students and supervisors. The latter is more akin to a normal professional recruitment and appointment – except that, instead of salary, a student is paid a stipend.

It is unlikely that a university, operating in a modern, professional environment, will simply allow a research supervisor to select a research student at whim and make an appointment without justification. It is far more likely that a supervisor will need to go through a formal process of recruitment and appointment, which fits in with a university's basic personnel requirements, including fairness, non-discrimination, etc. In some institutions it may also be the case that an individual supervisor

cannot make a scholarship award at his/her own individual discretion, and that the process needs to be carried out through an interview panel, constituted according to university procedures.

#### 6.4.2 Selecting the Appropriate Candidate for Postgraduate Research

In situations where the selection of a research student has become a matter for the supervisor (either as an individual or as part of a selection panel), a range of subjective issues will inevitably arise, and some familiarity with what these may be is useful. In the case of a novice research supervisor, the selection of the first postgraduate research candidate may be the first time the supervisor has ever had to appoint an individual to a professional role.

An experienced research academic will be only too aware that any human recruitment process is intrinsically subject to errors and inaccuracies. In the long-run, even for experienced individuals, the professional judgment used to select candidates may be wrong as often as it is right. For the novice researcher, however, there is no long-run, and a mistake in recruitment is tantamount to 100% failure on a single project. The stakes therefore appear to be much higher, so there is a greater impetus to try and *get it right*. The reality is that in a mature recruitment process, there is no *right* or *wrong* – there are just decisions with shades of gray.

For numerous reasons, including the inability to simply discard a research student at whim, the decision that a supervisor makes is one that he/she will need to live with (and make the best of) for several years.

The basic logic associated with the selection of candidates is relatively straightforward. In order to achieve good research outcomes, the supervisor needs to recruit a *high-caliber student*, wherein a *high-caliber student* is defined as one who will potentially outshine the supervisor. If supervisors have inhibitions (i.e., lack of self-confidence) about seeking students who are potentially better than they are, then perhaps they should ponder on this long and hard. After all, a research student who requires constant instruction from the supervisor is not really a researcher but a personal assistant.

The supervisor and the student need to be able to challenge each other (and each other's views) intellectually so that both can grow, and so that the

whole can be greater than the sum of its parts.

In the long-term, a supervisor will not be judged solely on his/her own achievements but the achievements of those that he has supervised. A research student who ultimately goes on to achieve greatness in research/academia; industry; business; government, etc. can become a testament to the supervisor's achievements as well.

It also needs to be noted at this point that if the selection process goes awry, and the postgraduate research candidate does not live up to initial expectations, then it will be a testament to the supervisor's skills if he/she can still lead the student to achieve good research outcomes, and to become an outstanding professional.

With these points in mind, there is obviously a need for the supervisor and the potential student to meet face to face – either at a formal interview session or an informal chat. In some cases, because potential students are international, a video conference may need to suffice. As a general rule, it is not a good idea for a supervisor to make a selection without any form of discussion with the candidate – and based solely upon a written curriculum vitae. At the end of the selection process, the two parties will need to have a professional working relationship for several years, and written correspondence does not provide a complete picture of an individual's capabilities. In particular, written applications tend to compress or suppress intricate nuances that may be critical to the selection process. And, needless to say, without additional evidence or verification, there are no guarantees that a presented curriculum vitae is even written by a potential candidate.

There are numerous issues to consider when conducting a discussion with a potential candidate about a postgraduate research program, and few of them are clear-cut. Table 6.2 lists some of the potential candidate traits that may arise during a selection process, and the sorts of issues that a supervisor should consider before making a selection.

Finally, there is the need to consider the intellectual match between the project and the research candidate. If a research project is intellectually below the stimulation level required for a high-caliber candidate, then that candidate may get bored with the project and leave mid-way through. If the project is above a candidate's intellectual capacity then clearly the candidate will not be able to achieve worthwhile outcomes. In general, however, a high-caliber candidate, given sufficient motivation and leadership by the supervisor, will take any project and drive it in his/her direction – perhaps surpassing greatly the initial expectations of what starts out as a mundane piece of research.

<b><i>Candidate Attributes</i></b>	<b><i>Issues to Consider</i></b>
Academic Grades - High	<ul style="list-style-type: none"> <li>• Are they indicative of a high level of intellectual capacity or just a propensity for rote learning and structured problem-solving environment?</li> </ul>
Academic Grades – Low	<ul style="list-style-type: none"> <li>• Are they indicative of low intellectual capacity or a creative inability to conform to structured undergraduate learning – are they intellectually "above" the undergraduate learning process?</li> </ul>
Loud/Assertive Personality	<ul style="list-style-type: none"> <li>• Does this indicate arrogance and misguided sense of self worth or a capacity to cut through problems when necessary?</li> <li>• Will it be possible to work with the candidate?</li> </ul>
Quiet/Subdued Personality	<ul style="list-style-type: none"> <li>• Will the candidate be able to work with colleagues, technical and laboratory staff?</li> <li>• Will the candidate be able to get things done when assertiveness is required with other people?</li> <li>• Does the subdued personality indicate modesty and an individual who considers things before acting rashly?</li> </ul>
Flattering/Gushing	<ul style="list-style-type: none"> <li>• Does the supervisor want someone who just feeds his/her ego or someone that will challenge every idea in order to get better research outcomes?</li> </ul>
Combative Personality	<ul style="list-style-type: none"> <li>• Will the candidate be disruptive to the research group and disturb the work of others?</li> <li>• Is the supervisor an individual who relishes intellectual arguments or avoids confrontation?</li> </ul>
Career Planner/Projector	<ul style="list-style-type: none"> <li>• Does the candidate have an oversimplified view of his/her professional trajectory?</li> </ul>
Over-Ambition	<ul style="list-style-type: none"> <li>• Does the candidate have the perseverance required for a project lasting several years or will he/she just flit from one short-term opportunity to another?</li> </ul>
Lack of Ambition	<ul style="list-style-type: none"> <li>• Does the candidate lack ambition because of laziness and lack of self-motivation or because they require a significant challenge?</li> <li>• Can the supervisor provide the sort of challenge that will spark ambition?</li> </ul>
Attention Span	<ul style="list-style-type: none"> <li>• Does the candidate get easily distracted by techno-gimmicks (e.g., smart phones)?</li> <li>• Does the candidate require constant stimulation to retain interest?</li> <li>• Can the candidate avoid distractions and focus on a rigorous, disciplined research pathway?</li> </ul>

*Table 6.2 – Candidate Attributes that Supervisors Need to Consider*

## 6.5 Submission of Candidature Forms

### 6.5.1 General

The university processes associated with the submission of a postgraduate research candidature form vary greatly from institution to institution, and country to country. At its most basic level, a candidature form is a contract that clearly enunciates the program of investigation that is to be undertaken by a postgraduate research student, in order to achieve a higher degree by research. Essentially then, it is a formal, three-way agreement between the university, the supervisor and the student. It therefore needs to be taken seriously by all parties.

Importantly, from the perspective of the supervisor, the candidature proposal should not be dismissed merely as a piece of annoying bureaucracy that gets in the way of creative research. It is the reference framework for the student, supervisor and university for the duration of the research program. To treat it as less than such is to do an injustice to the research student.

Consider particularly a situation where one of the parties to the candidature agreement is unable to deliver its side of the contract, and the research student is subsequently unable to complete his/her higher degree outcome. In the modern world, there is a real prospect that litigation will arise.

For these reasons, a candidature form generally contains a number of academic, procedural and managerial aspects, specifically detailing issues such as:

- The title and program of research to be undertaken, including some notional methodology
- The expected outcomes of the research
- The capacity (skill-set) of the supervisor/s to oversee such a program of research
- The capacity (academic record) of the research candidate to undertake the program of research
- The resources to be provided to the candidate by the university in order to complete the program of investigation
- The ethics requirements of the investigation, where applicable.

Implicit in this three-way contract is an understanding that if each of the three parties delivers on its commitments then, following examination, the

research candidate has a high likelihood of being awarded a higher degree by the institution.

### 6.5.2 Candidature Processes

The processes for higher degree candidature vary considerably from country to country and institution to institution. For example,

- In some institutions a potential research student needs to work closely with a supervisor to prepare the candidature proposal in a joint effort
- In other institutions (particularly where international students are involved), a potential research student may prepare his/her own candidature form independently of the supervisor, and only meet with the supervisor to discuss it after the proposal has been considered and approved by other committees
- In some universities, potential students need to submit candidature forms in conjunction with scholarship applications
- In other institutions the scholarship process and the candidature process are completely independent issues
- In US universities, a thesis committee is often used, with the supervisor chairing that committee. It is also common for a candidate to have a *qualifying exam*, often oral, after a presentation to a qualifying committee. The subject matter is often an extensive review of background literature. A student who passes the qualifier then advances to candidature for a higher degree such as a Doctorate, and is overseen by the thesis committee.

With these points in mind, it becomes apparent that there are numerous potential entry points to a postgraduate degree program, depending upon both the country and institution in which it is conducted.

For these reasons, and because a supervisor is one of the key parties to any candidature agreement, he/she clearly needs to be on top of all relevant university processes that are in place to deal with the preparation and submission of an application. Ideally, the supervisor needs to scrutinize closely any research proposals submitted by potential research candidates. A supervisor needs to be satisfied that any submitted candidature proposals:

- Present a reasonable opportunity for the research student to achieve his/her objectives within the allotted research time-frame
- Are research activities which are reasonably within the supervisory capacity of the supervisor
- Can be accommodated in terms of laboratory space, equipment and other resources
- Where applicable, that there is a high likelihood of the research (and the research student) being given appropriate ethics approval and/or certification (accreditation).

There are, however, numerous logistical problems associated with the candidature process. In a traditional postgraduate research process, a final-year undergraduate student may simply approach an academic/researcher and the two may mutually agree to participate in a specific postgraduate research project.

However, this does not accord with many modern practices. For example, in some large universities, there are thousands (sometimes tens of thousands, when including international students) of potential postgraduate research applicants, who need to be matched with potential supervisors. In many cases, the students and the supervisors have never met – sometimes the two are located in different countries. A hosting university may also have separate operational units and committees to deal with postgraduate research and scholarship applications. So, things are considerably more complex than just having a potential supervisor and student agree to work together.

In the context of growing internationalization of the university sector, it is increasingly common for an international postgraduate applicant to identify an academic within a university (from a website), then submit a candidature form, independently of the supervisor, to the university. Many universities have online, automated candidature application processes – some with automated administrative workflow at the back-end. Inevitably, given the volumes of applications that may arise, it may be that some research projects proposed by students are completely impractical in the context of resources available at the university, or simply outside the supervisor's specific field knowledge.

The point here is that there need to be checks and balances within the university system to prevent mismatches from happening. However, the reality is that in large institutions, having numerous operational units; committees with overlapping jurisdiction; offering thousands of scholarships to a shortlist derived from tens of thousands of applicants, and matching these with thousands of supervisors, anomalies will inevitably

arise. Supervisors need to be able to identify and manage these anomalies, mismatches and other errors in a professional and courteous manner which reflects well upon the university.

Regardless of the processes that are in place, the buck ultimately stops with the supervisor and, regardless of the point at which the candidature application form finally materializes, it is the supervisor's responsibility to ensure that the contents are entirely accurate and feasible – or that the application is immediately altered to something which represents the mutual agreement of the three major parties to it.

### 6.5.3 Ethics Considerations

In some universities, the submission of a research candidature proposal, in which the proposed program of research includes either human or animal related experimentation, including even mundane matters, such as surveys, it may be necessary for the research candidate to obtain ethics approval. The processes related to ethics approval will be specific to each institution. However, they are often complex and, in some universities, ethics approval may also require that the research candidate achieves certification or accreditation in some ethics related training program.

The research supervisor has a responsibility to ensure that he/she is fully apprised of the ethics requirements of the university and the proposed research project, before agreeing to undertake any supervision that will involve ethics approval.

In particular, a supervisor needs to factor ethics related issues into the timeframe of a postgraduate project and then determine (estimate) whether or not that project can still be completed within the allotted candidature time.

#### 6.5.4 Timeline Considerations

Research students who are local to the university may have some latitude in the total number of months that they can dedicate to a postgraduate program. The same may not be true for international research students. There may be constraints on visas, work permits, etc. that restrict the total number of months that international students can devote to their candidature.

It is incumbent upon the supervisor to consider carefully and realistically (i.e., without optimistic assumptions) the actual time that a candidate will require in order to complete his/her program of research. If a supervisor genuinely feels that a candidate will be unable to complete the work outlined in his/her candidature proposal, and it is clear that the candidate does not have latitude in extending candidature, then the supervisor should act early to initiate revision of the proposal.

A supervisor who allows a time or resource infeasible proposal to go through the candidature application process, in the hope that good fortune might intervene during the candidature is, in the best interpretation, naive and, in the worst interpretation, acting unethically. A failure on the part of the supervisor to provide an early intervention may lead to a research candidature which is never completed, or which fails the examination process.

At all stages in the candidature application process a research supervisor needs to understand that he/she is dealing with matters of more significance than mere university bureaucracy. Applicants for research candidacy are often staking their dreams and career aspirations on the outcomes of a candidature/scholarship application. For some international applicants, particularly those emanating from undeveloped or developing countries, acceptance into a world-class university could not only change their futures but also those of their families and possibly surrounding regions. So, while the candidature process may be bureaucratic, one should never lose sight of the fact that the outcomes of that process and the selections made could significantly change people's lives.