Unpacking the Challenges Associated with Postgraduate Supervision – a Commentary from Ethics

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Samevatting

Hierdie studie lig etiese probleme toe wat met nagraadse studieleiding geassosieer kan word. Dit word geargumenteer dat etiese probleme nie tot die integriteit van die navorsingsproses of plagiaat beperk kan word nie. 'n Hele reeks probleme word bespreek om te konstateer dat wanneer waardes belangriker word as dit wat normaalweg met nagraadse studies geassosieer word, etiese dilemmas ontstaan. Die voorstel dat die bevordering van navorsingsonderwys kan help om die belangrikheid van etiek in navorsing te bevorder en om potensiële etiese probleme te voorkom, word gemaak. 'n Literatuurstudie, asook gevallestudies word gebruik om die argumente in die studie te ondersteun.

Key words: ethics, research, postgraduate supervision

1. Introduction

A recent meeting of the European University Association (EUA) on Doctoral Education (Lausanne, 2009, June 4-5) highlighted some challenges associated with doctoral education. A number of new developments changed inevitably the practices associated with doctoral education. Evans

(2009) identified some of these challenges and even pointed out some of the paradoxes associated therewith: doctoral education shifted from elite to mass education, curiosity-driven research to results orientated research, personal fulfillment to measurable outcomes, collegial relationship to managerial behaviour, etc. Next to *generic skills* such as ethics, leadership, collaboration, teamwork, time management, etc. *transferable skills* and *professional orientation* are demanded. Quintanilha (2009) joined Evans with his remarks that universities must meet three requirements: *Firstly,* it has to provide the job market with the best professionals available (primarily at undergraduate education). *Secondly,* they have to educate people that are at the frontiers of knowledge creation (research). *Thirdly*, research must contribute towards relevant and robust knowledge – it should have meaning/value for business and industry. These remarks are not removed from the new South African government's vision of a developmental state where the emphasis is laid on job creation, health, education, crime prevention and security and food provision.

These and many other challenges led to the conclusion that the university as knowledge organisation has now to face the needs of political demands, organisational development, professional requirements, financial constraints and people's aspirations. The ensuing question now is "*For whom and what do universities train doctoral students?*" This question is problematic for at least two reasons: *firstly*, university education is about educating scholars and *secondly* the primary objective of this type of education is to expand the knowledge basis. These two university tasks are very often at odds with public demands on what universities have to do. Following on these two reasons arises the question what relevance has (doctoral) education and knowledge growth for society? Dillemans (2006:13-14) provides an interesting perspective. He says that research should not be limited to a societal domain (next to many other domains) but should inform all domains (health, environment, culture). The value of his remark is that science (education) doesn't exist for its own good, but should inform societal developments to prosper society. Dillemans (2006:17) continues to say that university education should be scientific and there should be a link between science and education.

The emerging challenge surfing here (at the research level) is whether society's expectation (at large) from universities to deliver on societal needs (in its broadest sense) is in line with what a university is supposed to be doing? The challenge is particularly evident in postgraduate supervision where research, education, training and engagement meet. Van de Sand (2009) correctly observed that supervision is an important

mechanism to *secure quality* in doctoral education. If this is not well attended to, then the integrity of the entire research process is being questioned. Bitzer (2007:1011) echoes the same sentiment. He says that although good supervision is central to successful postgraduate research, it is a teaching-learning process poorly understood.

On top of these challenges is the ethical question of research integrity. *Firstly*, is it ethical to train students when they are supposed to be educated? *Secondly,* are students a means to an end (subsidy)? Has education become subjected to market-driven needs? *Thirdly,* are students in the degree mill just to deliver or are they educated to be the emperors of the mind? In the debate on postgraduate supervision one cannot ignore the ethical challenges and consequences.

This article will unpack and discuss some of these ethical challenges and consequences.

2. The importance and complexity of postgraduate supervision

It is evident that postgraduate supervision is of interest to more than one party and for different reasons:

*   *University administrators* have taken an interest in postgraduate supervision due to the prestige for universities associated with postgraduate studies, the monetary value (subsidy) linked to the awarding of postgraduate degrees and the ranking of universities based on universities' research cultures and performance.

*   *Policy makers*' interest is driven from a steering perspective: how are universities meeting the targets and profile set for the transformation of this aspect of university education? In addition how is postgraduate education contributing towards building university communities and servicing enterprise needs?

*   *Supervisors* are interested due to new research challenges associated with their scientific fields of study. Postgraduate students are an important resource to sustain research programmes. The training of Ph.D. students has also become a major source of funding for researchers ((for example the National Research Foundation's Ph.D. as a driver (www.nrf.ac.za)).

*   *Researchers* on postgraduate supervision are enquiring into aspects such as epistemological development, conceptual formulations, knowledge invention, ontological progress, enrollment patterns, completion rates, etc.

The *communality* between all these parties' interest is that supervision is a fundamental aspect of a university's core activities. Postgraduate education should develop individuals who think and argue and not simply individuals who are "subject idiots". This means to understand one's subject in relation to the scientific domain and its application to society (De Dijn, 2006).

Postgraduate supervision has the ability to link the core activities of universities: it's a special kind of teaching (labelled as small group education, one-to-one education, powerful education), research (discovery of new knowledge) and the application of the newly gained knowledge (engagement, technology transfer). Bitzer (2007:1010) confirms this statement with his comment that "Whether considering postgraduate supervision as assisting the process of academic renewal or seeing higher degrees as a marketing tool, quality supervision clearly contributes to institutional and broader goals and is valued."

Notwithstanding the importance of postgraduate supervision it is evident that not all is well with postgraduate supervision practices at universities. Literature supports one with the following observations:

- Ph.D. training is subject and field specific. The objective of the qualification is aimed at training scientists and not supervisors. The result is that universities expect academics to supervise postgraduate students without the supervisors having always the necessary background to do so. Hence the remark that the Ph.D. is not qualification enough to train postgraduate students. (It is therefore no surprise that many universities have taken on mandatory regulations to educate new supervisors.) Van der Linde and Holtzhausen (2008) share this concern. It is for this reason that they suggest improvement-orientated practices. These practices include training of both supervisors and postgraduate students. This training can be grouped into *intellectual* (workshops, mentoring, etc.) and *structural* activities (committees, grants, etc.) (see Lues & Lategan, 2006b).

- Too few students complete their postgraduate studies in the minimum residency time. Many more students either take too long to complete their studies or dropped out of the system. Despite this observation, Mouton's (2007:1088) research on the enrolment to completion rates for doctoral students in South Africa indicates that the South African situation is not out of step with international trends.) According to research some of the reasons why postgraduate students drop-out of the system are *improper* supervisory practices, lack of a supportive

research environment, absence of equipment, financial shortages, family problems, etc. (Mohase, 2009). Next to the challenges mentioned, Maasdorp and Holtzhausen (2009) articulate problems around preparedness and expectations to contribute towards the failure to complete studies successfully. They refer to challenges such as that postgraduate students do not always know what postgraduate studies entail or what level of performance is expected. Another problem is the lack of understanding the importance of a professional relationship with the supervisor.

These developments leave one not only with some serious ethical challenges, but also ethical dilemmas seen from research ethics (the integrity of the process); business ethics (the expenditure of funding), educational ethics (training in stead of education), professional ethics (under prepared supervisors and not committed students), social ethics (societal needs and concerns in health, nutrition, water, energy, etc) and developmental ethics (improvement of living conditions), etc.

3. Ethical challenges with regard to postgraduate supervision

Two case studies described by Brain Schrag illustrate the ethical challenges associated with postgraduate supervision.

"Whose lab is this?"

In this case, Prof. Beverly Baker heads a biotechnology lab. One of her students, Alex Archibald, is working on a technique initiated by Prof. Baker, but apparently doesn't work for this experiment. The professor is however, firm on the technique: "This method is unique to our lab and is a cornerstone of our work and our grant proposal. No other labs use a detergent-free method. I developed this method, and my lab used it for many other proteins. The last summer student also wanted to change protocols for her project, but eventually worked out the purification conditions using my protocol as a guide" (Schrag 1999:1). Alex decided to use another technique with excellent results. This was based on techniques reported in published articles. The professor was furious and remarked: "Alex, I told you explicitly not to do that. Why did you directly go against me? I am in charge of this lab, and the use of proteins purified without detergents is central to our unique position in the field! … I do not appreciate you doing things behind my back. From now on, never conduct experiments without any explicit approval! All you've done this weekend is waste your time, and the time and money of my laboratory!" (Schrag, 1999:2).

In Schrag's commentary on the case the ethical and moral issues intertwined with the student-mentor relationship was highlighted. This is a case on student-mentor relationship. Both have to balance rights and duties (Schrag, 1999:7). There might have been a good relationship, but the eventual events signal tension and mistrust in the trail. Questions by Alex could be how graduate education developed his own critical thinking and ability to design and carry out relevant experiments in the pursuit of scientific knowledge? The opposite is also true: The professor can mistrust the student. Why is he doing things behind her back? What else is he doing behind her back? Laboratories consist of students, technicians, post-docs and staff: are the roles and responsibilities ironed out? One also needs to observe the two hats Beverly is wearing: she is head of the laboratory and is also a mentor to the students. Things such as money, other staff and authority are implied. Her sensitivity for the grant signals that she might not be an established leader in this field of study (Schrag, 1999:5). Why is the professor not open to other techniques? Alex thinks that towards the end of his studies he should have built authority on ideas. The case is typical of a clash between many things: "This interplay between creativity and authority on both parties emerges as an undertone to the case, yet as stated in the title" (Schrag, 1999:5).

More comments can be added: the American National Academy of Science in 1992 distinguishes between "misconduct" and "questionable research practices" as those which "violate traditional values of the research enterprise and may be detrimental to the research process" (National Academy of Science in Schrag, 1999:6). Both the professor and the student are not guilty of misconduct, but they are guilty of carrying out questionable research practices.

Mentor support?

Janet is studying with Dr Edgar. He is hard to contact, return drafts late with a few helpful comments. Since he has taken on an appointment as associate Dean for Research he is even less available to assist. Janet had decided to work on her own on her proposal whereafter she submitted it. He then identified a design flaw. He, however, decided to let it go with a few minor comments. Janet prepared the proposal for the committee meeting. The morning of the meeting he brought more comments and remarked on the design flaw. Although he said that it was not serious, the proposal was turned down at the meeting. He then replied that he was surprised that she didn't follow up on his suggestions (Schrag, 1999: 29).

Janet discussed this incident with Tom who had a similar experience. She decided to discuss it with Dr Rob Smith, the head of department. He was dismayed with Edgar's reaction and the way in which Janet was treated. He decided to discuss the matter with Edgar (Schrag, 1999:30).

In this case study two issues are at stake: firstly, Janet's dilemma with the student-mentor relationship and secondly with the professional behaviour of Dr Edgar.

In the comments on the case study it is stated that the rules for the student-mentorship relationship should be discussed. Dr Edgar did not inform her as to the seriousness of the proposal meeting. He shouldn't have led the proposal go through for submission (Schrag, 1999:31). According to the American National Academy of Science (1997) he has the responsibility and obligation to help her through the programme. One should also understand his time pressure and his dual role (Schrag, 1999:32). But one should not take on students if you don't have the time to do so. The moral dilemma here is vested in the poor student-mentor relationship and the professional behaviour of Dr Edgar. Effective advisors are good listeners, good observers and good problem solvers (National Academy of Science 1997 in Schrag, 1999:32). "In addition, effective advisors keep in touch with each graduate and respect the goals and interests of good students. (Schrag, 1999:32).

4. Research problem, design and methodological considerations

Based on these observations and case studies one can state that postgraduate supervision is important yet it needs a broader contextualisation within ethical discourse.

For purposes of this study ethics is defined as the application of norms and values to a given situation. In this study ethical norms and values will be applied to the postgraduate research process. Norms are the identified principles according to which the researcher operates. Norms are the application of these values. One's orientation towards a norm is influenced by a world and life orientation (see Van der Merwe's (2009) discussion on what he calls "bedroom philosophy").

This study is a literature based research study. The purpose of the literature review is threefold:

- It will gain an *overview* of postgraduate supervision practices.
- It *critical reflections* on postgraduate supervision practices.
- It will create a *critical mind* on postgraduate supervision.

This view on the literature study is based on the assumption that the literature review is not meant to repeat what is already known but to provide the basis for furthering the discussion constructed on the basis of the published research (see Lategan, 2007). The literature review presupposes a paradigm from which the literature is reviewed. The paradigm is informed by a philosophical understanding of research. In this study the philosophical understanding is informed by a number of observations. Here the author refers to George Ritzer's idea of the MacDonaldisation of modern society and Max Weber's concept of rationalisation of modern social institutions. From these concepts follow topics such as markets and higher education, bureaucratization of the university, research as means of third stream income, governance, social responsibility, etc. Two major challenges follow on these concepts and realities: (postgraduate education) should be more responsive towards the markets, ICT and knowledge production and social needs. More importantly is that postgraduate studies are now used as a vehicle to address these challenges and expectations whilst the focus is less on the scholarly activities that should be associated with postgraduate studies.

The general conclusion in reaction to these developments is that the value of higher education can easily be lost as a result of marketisation and privatisation. Similar observations are made in a book edited by Patyn and Van Overwalle (Eds) (2006) who identify the ethical implications of an economy-driven higher education for research. The discussion thus far and the case studies illustrated where external factors (funding, dual roles, lack of professionalism, etc.) overshadow the research process, then conflicting behaviour can emerge in the research process. It is then when ethics need to be called in to put these challenges in perspective.

On the basis of this approach, postgraduate supervision will be commented on from an ethical perspective.

5. Brief overview of the skills associated with postgraduate supervision

A range of supervisory skills is required to assist the student to be successful in the completion of a post-graduate research project. These skills are of a *personal, scientific* and *partnership* nature. Each of these classifications has a specific direction. The *personal skill* means what the supervisor has to do to act as a supervisor (one can refer to this as licensing). *Scientific skills* refer to what the supervisor should know about the science of supervision (which is not the same as the science of one's professional field of study). *Partnership skills* direct the relation between

the supervisor and post-graduate student. This relationship entails professional behaviour, leadership and mentorship.

The identification of these skills already indicates that supervision cannot happen by accident. The supervisor should be trained as supervisor. This is one of the academic development skills of academics that very little attention is paid to. The fact that the supervisor holds a Ph.D. doesn't mean that he/she qualifies automatically to be a supervisor. Supervisors need to be trained. Several reasons exist of which two are mentioned. *Firstly,* supervision is a very specialized way of knowledge transmission (teaching). If you are new to supervision then you need to be trained. *Secondly,* even if a supervisor has assisted many students to complete their post-graduate studies successfully he/she still needs continuous training to be well informed of the changing research environment and new practices associated with supervision.

The identification of these skills is based on three case studies conducted to identify the required skills at a post-graduate level. The objective of these case studies was to identify system specific directives for a postgraduate supervision programme benchmarked against acknowledged supervision practices. From these case studies the following observations were made:

- Regardless the discipline generic skills are needed to complete the research project.
- Students are not always clear on what the literature review is all about. (What is said and not said?) Critical reading skills of and engagement with literature are missing.
- There is a lack of methodological understanding, insight into the structure of the thesis, very often the absence of scientific writing skills and the know-how of referencing techniques.
- The methodology doesn't always match the objectives and problem statement of the study, the study is very often too broad or not focused enough.
- The role definition is not always ironed out. *Who is responsible for what*?

From these observations another two interpretations can be made: *Firstly,* proper guidance from the supervisor is sometimes absent. *Secondly,* students are not always prepared for the demands of post-graduate supervision. It is for these two reasons that a range of supervisory techniques were formulated to assist the supervisor in guiding the post-graduate student but also to prepare him/herself for the demands of the supervisory role (see Lategan *et al*., 2008).

In revising the postgraduate supervision practices, two issues cannot be compromised.

- Intellectual skills and scholarship cannot be compromised in favour of professional skills only. The responsibility of higher education is to *educate* people and not to *train* students for a particular profession.
- Quality is important in all aspects of postgraduate education. Quality is defined in this context as *fitness for purpose*. The question that needs to be asked repeatedly is if postgraduate education can deliver a student for the world of work who is able to identify problems, to solve the problem and then to manage the solution.

6. Ethical commentary

A number of ethical problems related to postgraduate supervision can be identified. The following five examples serve as basis for discussion.

Firstly, being an academic demands that one stays abreast of your field of study. No academic can claim scholarship without being continuously educated in his/her's field of study. This claim can be categorized as the professional commitment to one's career. Evidence suggests that supervisors are not always specialists in the areas in which they are supervising studies. A welcoming new development is the emphasis on key research programmes at universities. The rationale behind these developments is to build a critical mass and to sustain state of the art research.

Secondly, it is easy to stagnate and find comfort in one's own paradigm. This comfort zone can easily be used as an excuse not to think the limitations of one's paradigms through. When one is loosing the argument or debate the excuse is that your paradigm leads you to a specific perspective or that the counterpart didn't understand it as such. This escape route questions scientific integrity.

Thirdly, one hardly ever reflects on what influences one's way of doing things. It is quite erroneous that self-assessment is hardly applied to one's scientific endeavors. This questions one's ability of fitness of purpose (is one doing the right things opposed to fitness for purpose – is one doing things right).

Fourthly, the emphasis is seldom on a professional relationship with the student. Supervisors exercise often a power relationship with the student. As a result the student has often very little room to move in his/her project. Another obstacle is supervisors who spend very little time on the project compared to what the gains from a student who graduates (example promotion) are. The invert is also true. One expects from postgraduate

students to be focused and well prepared, yet it is often amazing to see how little effort goes into the research project.

Fifthly, postgraduate studies have become a vehicle for financial gains, social redress and response to business and industry needs. Although there is nothing wrong with this, a problem emerges when these expectations are the only reasons why postgraduate studies are important and also the only focus many supervisors have.

These dynamics led to another question: *Are supervisors fit for the professoriate?* This is to say if one subscribes to the classical notion of the professoriate as "*license to teach*" meaning that one has the authority to teach science in public. (The title "professor" originates from the Latin *profiteor* which means to declare or acknowledge openly. The professor is regarded as an authority or expert in science. The professor is regarded primarily as a learned person and a scholar, focusing on a field of specialization.)

Regardless the answer, these dynamics also opened up the question on one's professional behaviour as an academic. At the heart of this question is the fundamental work ethic question namely: *Does one do justice to one's academic calling?* This question is further clouded by the management sciences' advocacy of *self invention* and *renewal*. Once again the question is echoed if one can practice timeless quality but respond in good time to challenges in one's discipline?

It is always troublesome to interact with academics who hang on forever to fixed concepts, assumptions, and perspectives without realizing that science (generally speaking) itself is continuously in a state of renewal. It is equally stressful to debate anything with academics, who have no appreciation for the prolegomena of their science. One tends to ask what the rules of the scientific debate are? Strauss (2006, 2008, 2009) provides some useful comments with his ground rules for academic communication and critical thinking. According to him one needs to know your own scientific framework, identify those of the other person and debate/critique a topic on the basis of similarities and differences. The value of Strauss' perspective is that one needs to understand a science in its complete domain of development. This means that there is no point in critiquing a point without taking the context into account. He further comments that *analytical* critical skills are an important mechanism to assist the student in mastering scholarly abilities. Rossouw (2005:12-15) is as helpful as Strauss with his guidance on the intellectual skills needed in science. He provides the following observations:

- The willingness to listen to, investigate and understand new ideas.
- Intellectual fairness – don't concern oneself with irrelevant hair-splitting or unnecessary criticism.
- The honesty concerning one's own prejudices, preferences and sentiments.
- The willingness to analyse to understand what the debate/topic is all about.
- The willingness to fit questions and arguments into the greater context.
- The willingness to experiment. Can things be different? Is an alternative possible?
- Intellectual perseverance. It takes time to work through an argument and to form one's own perspective.

Although he frames his guidance against the background of the social sciences he rightfully remark that one must be fully ware of one's own prejudice and worldview. Rossouw assists one to realize that practice of science is reserved for peers and that uninformed academics can add no value at all to a debate.

Although this sounds obvious that academics should be well informed as to the developments within their science, this seams not to be the case. It is noteable that reference lists/bibliography reflect on tradition and not scientific history. Academics are also less eager to write for their peers. This is also evident from value-driven science journals where people act according to paradigmatic orientations and not the scientific debate. This confirms a fundamental value that paradigmatic orientation does not exclude a broad base understanding (at least historical developments) of a science. The way in which ethics as a scientific discipline has developed, is evident thereof [see for example Van der Merwe's (2006) account on ethical models and personal orientations].

7. Extending the role of ethics

Bitzer (2007:1012) poses the challenge how to promote scholarship in both teaching and research.

In addition one can ask how to best promote integrity in all these processes? In this regard the author would like to propose an *extended research education* as basis to address the ethical challenges associated with postgraduate supervision. Although the name "research education" might not be commonly used, conceptual guidelines for such an education exist. But, the problem is that not enough attention is paid to the ethical armor of the supervisor and the postgraduate student. My statement is

based on a great number of books published (in South Africa) the last decade to guide the novice, mid-career and established researcher in doing research. (In the South African context one can refer to studies by Mouton (1996, 2001), De Vos, Strydom, Fouché and Delport (2005), Rossouw (editor) (2005), Lues and Lategan (2006a). Lategan *et al.* (2008) and Henning, Gravett and Van Rensburg (2005). A common characteristic of these books is that they present more material than methodological matters only. Popular topics include issues relating to the research process, the execution of the research and the finalization of the research project. Topical themes are on the research protocol (plan), the supervisory process, the writing up of research and technical issues such as referencing, technical requirements of the study, etc. *Important but not enough attended too themes include research ethics, mentorship and project planning.* In addition, a serious shortcoming is the debate on technology transfer and commercialisation of research, and intellectual property, plagiarism and co-authorship. Needless to say, it would be a fallacy to report that information on these and many other topics are not available. The truth is, however, that the debate on new emerging themes such as research, integrity and the enterprise is not widely debated yet as one would have hoped for (see Lategan & Hooper, 2009). In addition one should add that (post) graduate students are not well enough informed on these matters. This reason is simply that in the training at postgraduate level the emphasis is primarily on the scientific project and very little formal attention is paid to research education at the postgraduate level.

This article would therefore like to promote a basic framework for research education that can be regarded as crosscutting to all disciplines. For purposes of this paper research education is defined as what knowledge and skills are needed to engage with all the stages of the research process. The research process is associated with a continuum of activities starting with the research problem and ending with the patenting and commercialization of the solution to the research process. This approach presupposes that all solutions have patenting and commercial value. The merit thereof is debateable. What is important, however, is the realization that the research is not completed when only the research problem has been identified but it should be solved as well. For this a range of interrelated and interactive actions is required. This range of activities include

- Step 1: Research problem/question
- Step 2: Aims and objectives of study
- Step 3: Conceptualisation

- Step 4: Ethical issues and practices
- Step 5: Research Methodology
- Step 6: Scientific framework and philosophy
- Step 7: Literature survey
- Step 8: Data
- Step 9: Results
- Step 10: Evaluation and interpretation of results

In all these steps are potential ethical problems. Although ethics can be regarded as a step within a range of steps associated with the research process, ethical issues in all these steps should be considered by the researcher. These steps together with the central role ethics should be playing in these steps can be presented as follows:

Theoretical underlying problems
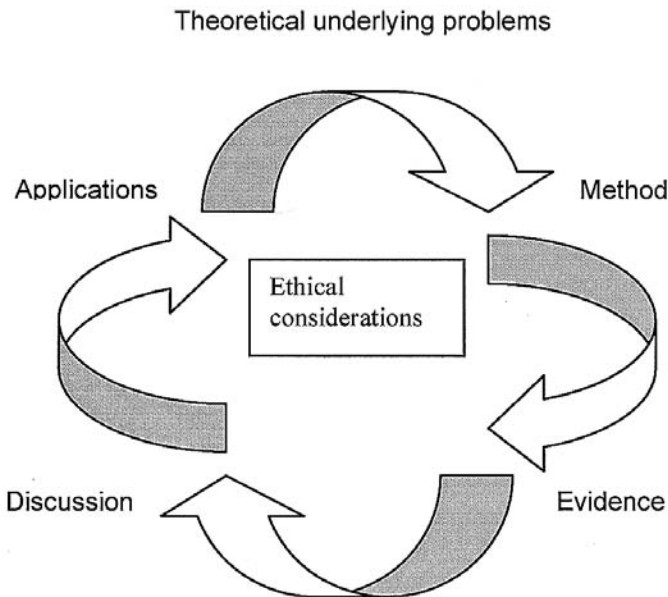
8. Conclusion

It is quite evident that ethical challenges in the research process cannot be limited to matters of integrity and plagiarism only. It is important that all parties involved with postgraduate supervision should be sensitized to understand these challenges. As discussed, can research education do much to promote ethical awareness in the research process.

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