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Creating Original Research

Creating Original Research Between Faculty and Higher Degree Research Students

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Working alongside higher degree students as they create original work is one of the joys of academic life. To take on the supervision of the student's research apprenticeship can be a rewarding challenge that may lead to future fruitful endeavours. With emphasis on PhD and Professional Doctorate programs, in this brief paper, we consider how to produce high quality

research within such partnerships whilst avoiding an ‘assembly line’ approach to undertaking higher degree research.

The relationship between faculty and higher degree students brings potential benefits to both parties. In nursing and the healthcare professions, students may view successful completion as either a ticket into academic life or an opportunity for career enhancement within their professional role. For academics, attracting PhD students, especially in competitive funded research, is highly regarded and successful completions are proudly displayed on one’s CV. Such completions are often a requirement for becoming a doctoral external examiner, another marker of professional esteem. If awards and grants are obtained, publications produced and conferences presentations made then it is not only positive for the supervisors and their academic track record, but also for the faculty and university who may also benefit through government subsidies and considerable prestige (Cleary, Usher, & Jackson, 2015; “Fix the PhD,” 2011). Further, there are numerous opportunities for students to collaborate with faculty during their candidature in higher degree programs and this can lead to substantial research output and a “win win”: benefits for the student and faculty alike. Higher degree research by students should be original and this is a must at PhD level; evaluation studies and systematic reviews are generally considered acceptable for Honours and Masters level research.

However, such initiatives can also present special challenges in terms of faculty and student collaboration and upholding appropriate standards. Increasingly, faculty are expected to conduct quality research that is original, substantive, and creative and to demonstrate a sustained research program with outputs, which should not be reliant on student work.

Developing inspiring and original research is not without challenges, and this is especially true when dealing with the everyday demands of teaching, academic advisement, administration, higher degree supervision, and other associated responsibilities in a competitive culture that requires high level performance.

A positive research partnership begins with the thorny matter of establishing a research aim or question. Students may be enthusiastic about a particular topic yet their supervisor has to help them create something original but realizable within the practical confines of their higher degree program. This issue needs to be handled sensitively; a passionate student can feel deflated if their intentions are not accepted immediately. This negotiation can be used by the supervisor to begin to set the rules of the partnership. For example, the supervisor's role should be clearly addressed from the outset to constructively advise, encourage, support and challenge the student rather than to instruct or criticize destructively. In some funded situations, a PhD student may contribute to a larger project by taking on a specific part of the greater whole and here it is imperative to negotiate who "owns" what. It is of utmost importance that the student feels free to choose whether or not to enter into discussions about such a partnership and the supervisor should not underestimate the power relationship at play. Similarly, both parties should have permission to withdraw from being the supervisor or supervisee as much can happen during the long course of doctoral study. As the work begins to take shape in written form, the topic and authorship of future joint publications can be raised. An early agreement should be made that the student's name should come first on publications and that they should be the corresponding author (Cleary, Jackson, Walter, Watson, & Hunt, 2012;

Lee, Clark, & Thompson, 2013). This is the ethical course of action but this practice may vary across subject areas.

Doctoral students are likely to be more confident and certain of their project (even if it does need knocking into shape) than Masters' students, who may be more malleable. Supervisors may be tempted to use an assembly line approach by encouraging similar projects (such as small pilot studies) in different specialty wards (for example, renal, cardiac, mental health). Methodologically, the projects may be familiar, thus adding to a supervisor's advisory confidence and, on the face of it, have the potential to add up to something more substantial but this partly hinges on successful publication. For example, a questionnaire type survey could examine nurses' experience of leadership but this would be likely to remain at a highly local level, a result more expected of undergraduate study. Such repetitive projects may waste precious resources, perpetuate research fatigue (Clark, 2008) and exhaust over-researched topics, as well as result in unoriginal and uninspiring research. Rather than being inspired by their efforts, the research student may decide never to conduct any research again, a poor result for all involved.

Fruitful research relationships between faculty and students are often based on good role modelling. Hopefully, this is the basis on which a research student will choose their supervisor and, later on, their examiners. This demands the highest research standards. Pressure to publish and win funding may lead to self-plagiarizing one's own earlier work. This is potentially problematic and should not be the accepted standard or norm or role modelled for junior faculty colleagues and higher degree research students. This plagiarizing also has implications for reviewers of funding

proposals, who are likely to be unaware that exactly the same proposal (with perhaps a few minor changes) may be funded elsewhere, and the authors may have failed to disclose that this new project is a replication study. Like readers (Altman, 2002), reviewers should be informed how this body of work relates to current knowledge and work. To avoid such plagiarism, proposals should be appropriately cross-referenced and there should be full transparency, including disclosure of related work previously undertaken. This is not dissimilar to publication standards regarding multiple outputs from single studies and what is considered acceptable and unacceptable division of findings (Jackson, Walter, Daly, & Cleary, 2014).

Why is this poor practice occurring and, apparently, growing? Academic jobs, especially tenured track positions, are few and far between and there is substantial pressure for staff to demonstrate research output (Cleary, Horsfall, & Walter, 2013). In this climate, some academics may unacceptably use students' work as their own. The variations between countries in the quality of PhD graduates and programs can, to some extent, support this "recycling," with some staff turning a blind eye in order to secure a competitive edge. Program quality is not consistent across the world (Cyranoski, Gilbert, Ledford, Nayar, & Yahia, 2011). PhD supervisors can take responsibility for their own good practices and for teaching their students about these pitfalls. This is a critically important part of their research apprenticeship.

In terms of quality, we also need to be mindful of recycling research as this approach can weaken and dilute the quality of the research program and undermine scientific literature. Research that is of poor scientific merit that merely copies "incorrect or inappropriate methods" can be difficult to

prevent “from spreading through the medical literature like a genetic mutation,” and authors may object to reviewer feedback, for example by indicating that the same method has been published elsewhere (Altman, 2002, p. 2766). Expert methodological input, especially from statistical reviewers, is sometimes in very short supply for Editors and this is noted to be more common for low-impact journals. It is therefore the responsibility of the researchers and to uphold integrity and ensure quality research (Altman, 2002; Cleary et al., in press).

How can institutions prevent the publication assembly line in higher education and promote high standard research relationships and research integrity? Postgraduate program coordinators should always keep a list of projects undertaken by PhD students and their supervisors. Each proposal submitted should indicate clearly whether this is a replication of previous study and justify the need to replicate in addition to cross-checking with previous research projects. Replication problems are not exclusive to any particular discipline and evidence suggests that all researchers are subject to unconscious bias (Winerman, 2013).

However, a positive, validating replication is acceptable when the replicating researcher shows the original study findings are robust to substantiate extensions over time (Burman, Reed, & Alm, 2010). These authors also outlined useful ground rules when replicating research, such as the replicating author being independent of the original researchers, describing the processes to replicate the original study, and providing the original author the opportunity to respond to the replication. Another important remedy is then to encourage students to replicate previous studies from a different theoretical perspective and cultural diversity to refute or concur

with previous study results.

Conducting pilot studies of a supervisor's main research is also acceptable but again this should be clearly indicated in the research proposal being submitted for the student's candidature. The institution's research committee also has a significant role to play in preventing assembly line research as they are the one responsible for reviewing the proposal before it is endorsed for submission to the Ethics Committee.

Achieving a good research relationship between a supervisor and higher degree student cannot be taken for granted. The supervisor is required to be a role model of high standards of research practice and probity, thus avoiding the pitfalls of assembly line methods: project repetition, taking intellectual advantage of research ownership over students, self-plagiarizing and replicating weak methods which endanger the development of evidence-based practice. Finally, research supervisors should not only co-operate with institutional quality assurance processes but ensure that their own work is peer reviewed. This is too important a role to be left behind closed doors

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