BUILDING VET RESEARCH CAPACITY THROUGH MENTORING: ONE SMALL STEP FOR NEW RESEARCHERS, ONE GIANT LEAP FOR THE VET RESEARCH COMMUNITY

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Abstract
In a turbulent environment where VET programmes are often subject discontinuous funding, the NCVER has funded a three-year programme of initiatives to build VET research capacity. The programme includes the provision of mentoring support for new VET researchers undertaking an initial research project. This paper reviews the initial dilemmas and progress of mentors and researchers, bridging geographical and cognitive distances, through interviews and interactive discussions, as they establish a new VET researcher pathway through an action research approach. Finally the paper provides some key guidelines for developing VET research mentoring schemes that are emerging from the first two years of these critical relationships. Guidelines that are being used to develop new VET researchers to change and transform future VET research landscapes.

Introduction – exploring the unknown
Late in the afternoon of a December day in 2006 just 10 kilometres off Hervey Bay I found myself somewhere I had not been before. The sunshine disappeared, the wind whipped up, the tide moved very swiftly and the previously calm sea started to throw white horses everywhere. What had been a tranquil day, turned into a fight for survival. I had to take a 42 foot catermaran through a narrow channel that seemed hardly wider than the boat itself, with a beach on one side and a sand bank on the other, and then navigate through a labyrinth of drying sand banks into what seemed like a very small harbour entrance. I had never done this before. I had never seen this boat or this water until three days before, and I had never sailed a boat so big. I tried to remember the rules I knew, the thinking sequences, and apply them to the moments in front of me. The boat would only go fast, and deeply cut into the waves, and I had to make the right decisions. Failure would result in a serious and very expensive incident being on the news. I applied everything I knew to the new situation. We made it to the harbour mouth with seawater crashing the length of the boat and soaking me every five seconds. Unbelievably for me we hit the gap in the middle, and once inside, all the turmoil of the sea outside disappeared. The task had been mastered. Physically placing yourself into the unknown is a very visible challenge. It is less evident when we do the same thing cognitively. Piloting a scheme to mentor new researchers in VET has had the same challenges of navigation with few markers in unfamiliar and often dangerous territory. We were doing something that had not been done before. This paper is about those experiences. It is about *researching* how we develop VET *researchers*. It seemed in the midst of the activity that Einstein's quote had never been more apt, 'If we knew what it was we were doing, it would not be called research, would it'? Most research retrospectively trawls the experiences of others and conceptualises the relations of practice. In this case proposals, action and reflection have formed a continuous cycle, with the roles of participant and researcher fluidly interchanging. It is important to assert that this paper is itself part of that reflection cycle. It is part of an as yet incomplete action in practice project, and just an interim statement.

The problem - a greying population

In 2007, the National Centre for Vocational Education Research (NCVER) began constructing another strategic plan for VET research priorities. They were constructing from a solid base, having established the national centre through more than fourteen years of research direction, building a massive statistical and report base that is the envy of many nations. In the field, VET research centres existed in many Universities and Technical and Further Education colleges (TAFEs), with a choice of annual conferences on offer. However, it was evident that this development had been carried forward by a body of researchers who had grown alongside and within the field themselves, but were now slowly walking away to the less onerous pursuits of retirement. In common with many professions there would soon be a shortage of mature expertise (APSC 2006: Dychtwald et al 2006).

Who would replace the diminishing pool of quality researchers in the near future? It was an opportune time to invest in the most vital part of the infrastructure, the researchers themselves. NCVER therefore placed specific emphasis on 'Building Research Capability' (BRC) in their 2007 strategic research priorities, and invited consortia to propose the strategies for the next three years (NCVER 2007). More than thirty organisations made proposals about what initiatives should be employed to develop new researchers. NCVER selected three concepts from the proposals that together formed the base of the BRC programme. The University of South Australia (UniSA) were asked to support VET research for higher achievers in the area of higher degree research training. Victoria University (VU) were asked to form a community of practice (Lave & Wenger 1991) with workshops to prepare new practitioner-researchers for their first local VET research project. AVETRA were asked to supply mentors for those same practitioner-researchers. These practitioners would have a year to carry out their modest, locally based, organisationally supported research project, drafting a final 20-page report for NCVER, and presenting at a VET research conference.

This paper focuses on this third initiative, the development of the mentoring network for the new practitioner-researchers. However, as it is the integrated action of the mentoring and the VU community of practice that has developed the new researchers, this paper does not attempt to divide the impact of the two initiatives upon the new researchers. This is a reflective narrative, and tells the story of a new venture from the perspectives of different stakeholders. It is an incomplete and limited narrative, an interim statement of the story so far. Even the gap between the writing and subsequent publication condemns it as a statement of the past, as the text remains static on the page, while the real activity it comments on is continuing. Finally while it is a statement about the past, as part of an action research project, it simultaneously is a tool that will generate further reflection, feedback and action, for future development.

Review of related literature – learning to research

Building research capacity is both about individual learning and about constructing systems of learning in a specific community. Learning theory has a long and contested theoretical history that at one extreme encompasses simplistic knowledge transfer, and at the other constructivist approaches to learning or knowing (Boud 2005; Poell et al 2000). This specific case of building practitioners research capability is aligned

with the latter end of the learning theory continuum. There are several reasons for making this assumption. First, it involves the development of higher order cognitive and attitudinal skills. Second, it builds upon considerable and diverse practitioner knowledge bases. Third, the knowledge base is complex and contested, with no 'right way', and considerable challenges in knowledge selection and adaptation for multiple and diverse contexts. In short, there is no agreed or simple body of knowledge to be assimilated and reproduced (Hager & Halliday 2009; Sanchez 1996).

Models of research development processes have been in existence for a considerable period of time as they form a core process within universities. The focus has generally been on diverse forms of cognitive apprenticeship (Berryman 1993) that position the learner as the selector of the learning direction and are based upon engagement with a real project and where senior academics act in a mentoring role as process protectors, network gatekeepers and motivators. These power relationships change and reverse as the project progresses. This academic model often fragments into a series of individual relationships, continually tracing the same development phases, yet remaining insular and disconnected as a developmental community. The focus remains on the individual and their specific projects. The goals of nationwide research training are achieved through individual completion rather than collaborative development, and are locally situated.

Such a model is appropriate for the part of the NCVER BRC programme involving higher research degree students, but it is inapplicable for the new practitioner-researchers, as they are building from a practitioner's knowledge base, not an academic knowledge base. In addition, they are producing projects for a VET practitioner audience, and not for academic examination. These learners have three specific needs. First, they need access to research knowledge and practices. Second, require critical support and review to focus their modest locally based research proposals. Third, they need to be supported and encouraged in their year-long action learning activity, as they may have the underpinning self-development frameworks of higher degree students. NCVER proposed that that these needs could be met through enrolment in a community of practice to workshop their projects, and through supporting each participant with a research mentor. While the existing patterns of higher research degree supervision provide an initial template for the relationship, the final goal and production required from the relationship is markedly different.

Mentoring has long an illustrious history of preparing individuals for future challenges by guiding their development activity, responding to questions and introducing them to network resources and opportunities (Johnson 2008). In relation to this developmental context, mentoring offers several advantages as a social learning strategy (Bandura 1977; Garrick 1998). It is individually focused, meeting the need of unique individuals and their contexts to form new identity (Du Gay 1996). It enables broad and diverse resources to be matched to specific individual needs. It enables a broad pool of mentors stretching across the continent to be available in different localities. The new researchers therefore benefit from a dual learning system, with mentoring providing the individual focus, while the community of practice provides a collaborative shared learning experience (Easterby Smith 2000).

There is a limited literature about constructing research capacity outside the specific goals of the university system. However Cooke (2005), provides a useful reflective

model of building research capacity with practitioners in the UK care industry. This model has guided the development of the AVETRA mentoring programme. Cooke (2005) indicates that learning is needed at the *individual, team and network levels*, and that *6 principles* will support such learning. Learning should be constructed to simultaneously build skills and confidence, it should be close to the field of practice, and should be based on partnerships. In addition, there should be continuity to the process, appropriate dissemination of findings, and the establishment of infrastructure.

Research method
The development of this mentoring network and the new researchers has been, and is, an action research project. This paper is therefore based upon action research methodology. It was evident from the start that while the project was nominally about building researchers in uncharted territory, it was simultaneously researching how such a venture should be constructed.

Zuber-Skerritt (2009) asserts that action research combines the dual aims of both action in practice and research. That is, bringing about a change in a field of practice and increasing understanding and knowledge about this event. These dual aims are often, as in life, not always in balance. Some projects are all about change with the research being a fringe benefit, while in others, it is the research that is the centre of the focus with the action more of a by product. These polarised approaches position the researchers in very different roles. In the former approach to action research the researcher is an activist, involved in the twists and turns of the change process. In the latter approach the researcher is more detached, focused on the process of research design and data collection, and less involved in the activity. Similarly in the former approach the development of knowledge is primarily through association, experience and is locally generated, while in the latter approach knowledge is more likely to be codified and distributed through publication. The value of action research projects in terms of learning lies somewhere between the participants and the impact of the project conceptualisation as it aids system development in different places and times.

This study is based upon the former approach, participatory action research (PAR), with the emphasis on the project activity, with the research as a subsidiary component of the action, and with the researcher an activist directly involved in changing practice (Deetz et al 2000). This paper therefore both tracks the learning already achieved through the interactions of this project, and at the same time seeks to begin the process of conceptualising the relations which have facilitated such learning.

The rationale for such an approach, as with all research methods, has to lie within the subject and the context. This project sought to make a significant change for new researchers in the VET research community and to make a change in the pool of available VET research capacity. The emphasis was upon effecting change, with the research process primarily contributing to that purpose, and secondarily providing the opportunity to understand and conceptualise the process. There would be little benefit in standing to one side and evaluating a failing process. The intention was explicit and drove the project. The focus of energy was upon action and review. The cycles of action research were therefore not pre-planned and formulated to govern the subsequent activity, but were formed by the needs of the participants, as an evolving process and only visible as a pattern in-retrospect. The benefits of this approach are threefold. First, the emphasis of the action was upon effecting change in a community

and upon the participants as activists not interviewees. Second, in recognising and vocalising the inherently action research nature of the initiative all participants were provided with space and legitimacy to voice their own reflections on the process, thus providing a focus on reflection as an integral part of the initiative. Third, all participants were enrolled simultaneously as activists and reflectors. The distinction between researcher and action, researchers and actors, was blurred. Coupled to these advantages come the associated problems of managing an action research project. It is far easier to be a voyeur in another community without responsibility for action. It is also easier to plan a research action programme, rather than continually adapting to each 'event' of an evolving and twisting programme that is led by participant needs.

Most approaches to research polarise the fields of theory and research, segregating them, yet moving from one to the other, to ground, test or generate knowledge. Action research emphasises the dialectical relationship between action and theory as 'praxis' (Morgan 1980). That is, the focus is on the interrelated and interdependent relationship between action and conceptualisation, practice and theory. It could be argued that the direct and interlinked nature of praxis in action learning is well suited to our current world where practice and relations are swiftly and continuously being reconfigured. Research and learning needs to similarly aligned (Zuber-Skerritt 2009).

Action research is characterised by cycles of *action* and subsequent *reflection*, where an evaluation of the impact of the changed practices leads to re-planning, further action, and another subsequent action research cycle. Traditional models of action research often emphasise intention, action and review, however the popularisation of the experiential 'learning cycle' (Kolb 1988) has emphasised a four stage conceptualisation of the change process where action (do) is followed by reflection (evaluation) and modified intentions (change) which are then implemented (plan). Action learning and action research are similar in conceptualisation as they both incorporate action and learning, but differ in intention and outcomes. Action research can be defined an approach to action and learning that is more intentionally systematic, enrols multiple participants, and publicises outcomes (Dick 1999).
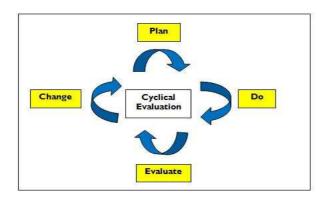

Figure 1: The action research cycle

In this action research project the impact of the change upon *the community* was privileged. The project was designed around a series of interactions intended to effect personal development and community development. These interactions have been iterative, built continually from the subsequent review processes. Thus the scheme as a whole has been built incrementally through a continual conversation, with the voices of the participants critical to each review process. However, the implication of

this organic approach to development activity is that the research component of the project has by design been a subsidiary component, always responding to the continually restructured cycles of action and interaction. The findings will provide with a narrative to clarify how this pattern formed.

Traditionally research begins with incisive questions exploring an issue of practice. Action research begins with determined action to effect change within practice. This action research study has already asserted the 'greying' issue that underpins this study. Instead of researching, reviewing and proposing options for change, this study is based on the continual review of an initiative designed *to effect* change. The goal of the NCVER BRC programme is to build VET research capacity. The **specific goal** of the AVETRA mentoring network, which is the focus of this study, is as follows.

> *The aim of the VET mentoring relationship is to support communities of practice scholarship holders[1] develop, complete and write up their VET research project.*

This action research project therefore focuses upon **three interlinked research questions**: What actions supported new researcher development, what was their impact, and what can be learned from the activity. It is important to re-emphasise that this review does not attempt to distinguish between the interrelated actions of the VU community of practice and the mentoring network support as participant development has been achieved through both sources of activity. This study therefore focuses upon what has been learned about developing and managing such a programme.

Findings - learning through experiencing
The findings are presented in two sections. The first section indicates the action research cycles that have formed during the scheme to give the reader a broad overview. The second part indicates the issues raised during this period by the various stakeholders.

Action research cycles
This is a narrative that reconstructs the patterns of practice over the past two years. A significant gap existed between the broad intention of the scheme(s) and the plans for action and interactivity. This narrative therefore is the first 'plan' of the scheme, retrospectively positioning the action and reflection cycle as an 'ordered' statement. Each paragraph that follows describes two action research cycles.

The first cycle begins with the NCVER planning process (July 2007) and the intention to build research capacity, publicise this intention, generate a significant number of action proposals and then review those proposals. In January 2008 the proposals were reviewed, the intentions for the scheme developed, and four consortia engaged to develop the components of the scheme. Meanwhile, potential candidates for the scheme had made project proposals (January 2007) that were reviewed by a national panel who selected the new researchers for the 2008/9 scholarships. Simultaneously, the now three consortia, discussed their activity plan for the next four months of introductory workshops and the development of mentors for each participant.

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[1] The NCVER provided $4k scholarships the chosen new researchers.

Plans for the workshops and the mentoring roles were drawn up and publicised. In May 2008, a two-day workshop was held to rework the participant proposals, introduce research skills and develop a community of practice. Subsequently, each participant was linked with a mentor that they had chosen from the pool. The progress of the scheme was reviewed through monitoring the mentors' actions, the interaction on the community of practice website, and the informal gatherings at the NCVER No Frills conference in July 2008. Interaction now continued between most participants and their mentors, and between participants. Scheme directors began monitoring calls and emails with participants (September 2008). Interaction between the scheme directors indicted the need for greater coordination. Schedules for contacting were initiated and teleconferences arranged between the directors and NCVER, between the scheme mentors, between some of the participants and AVETRA senior researchers, and between the AVETRA mentor scheme monitoring group.

These teleconferences took place between October 2008 and February 2009. There was significant opportunity for various stakeholders to vocalise what they were doing, what was working and not working and what they thought should be done. The notes from these teleconferences were used to shape subsequent action and to codify guidelines for action. By January 2009 participants were contacted to confirm the March deadline for their project completion and to receive the appropriate template for their final submission. Several participants prepared to present their project or findings at the AVETRA conference. Reviews of progress at this stage indicated that some participants were nearing completion and in the write up stage, others having difficulty visualising what they had to achieve, or struggling to find completion time.

In February 2009 the second set of participants were selected from 32 applications. Action for the first group of participants was discussed and planning for the May workshop for the second group finalised. In April 2009 several participants presented at the AVETRA conference, winning the best new researcher award, and being part of the conference committee. The diversity in terms of achievement and completion of the first group was discussed and plans for the second workshop reviewed.

A two-day workshop was held in May 2009 reworking the second group of participant proposals, developing research skills and instituting a virtual community of practice. Again, each participant was subsequently linked with a mentor who received a comprehensive mentoring manual. Most projects were reviewed at the NCVER No Frills conference in July 2009. Teleconferences for mentors in September and October 2009 enabled vocalisation of issues. Again, the issues from these teleconferences informed the mentor pool, and added to the guidelines for action. In November 2009 a second workshop was held at VU that also included those sponsored for VET higher degree research. The two days involved presentations, discussions on data gathering, research dilemmas and writing up. The discussions included advice for using the NCVER template and writing up the research. An evaluation of the scheme so far was completed for circulation.

Stakeholders Perspectives
During these cycles of the programme, notes were made of each reflective discussion and teleconference. The next section reviews the *key issues* emerging from these reflective discussions with an emphasis on those that were expressed with the greatest passion and by several participants, illustrated with quotes where appropriate.

For the new researchers the most common theme was engaging with the perennial researcher's battle between *project progress* and their day-to-day job - 'I just need more release time for my job to get things really progressing' – 'quite a struggle…. have to get back to it' – 'a year of living dangerously…need to focus questions'. There was considerable *initial fear* about what they had taken on, which was gradually replaced by the fear of decision-making as the project hit unexpected dilemmas –' I'm realising that research is never undertaken in a vacuum' – 'I need to focus down – cut with a sword (to make it manageable)' – 'I've had a great day today pulling together my research question and….starting to write'!

Mentor *support* was critical to motivation – 'her feedback, guidance and her ability to drive me to do my best is just incredible' – 'he is excellent….and really is a fabulous source of information'. The first group were unclear about what they *had to achieve* for their scholarship and only focused on the write up phase when the data had been collected – 'so far I feel I haven't done very much that is tangible (writing that is), but at the same time I feel that I have been learning much' – 'my original plan is just not going to happen (I'm) adapting to a much smaller sample'. The lack of a *clear timetable* meant that some participants hit the Christmas break without data and found their project set back by a two months – '… I am tracking a particular group….who have now left' – ' (my) industry partner not on the same timeframe as me….'.

The *mentors* were able to vocalise their issues through teleconferences that became a structural tool for the project. They emphasised the need for *an early face-to-face* meeting and the frustrations when *distances* prevented this – 'we have tried by our diaries keep missing'. Mentors needed to know what had been happening at the *workshops* and the limits of *their role*. It was evident that where mentors had an existing relationship with a participant it was a good omen for the relationship. For most mentors, recognising that this was not even an honours project was important to set *modest expectations*. The first year mentors were disadvantaged by not being able to see a *completed project* or a *desired timeline*. Having a timeline enabled early warning signals to be posted. Most mentors agreed that getting some early writing on table helped the participants with their project – 'he produced a simple two page lit review'.

For those involved in *directing* the scheme it was evident that just looking after your own part led to a *lack of coordination* across the programme. Stakeholders needed to know what was going on and what was expected. Where time was an issue for participants employers had to be reminded of their *supporting* role. The second year benefited from having an *existing mentor pool* for matching purposes and from action being taken where mentoring relationships did not flourish. The issue of *ethics* became part of the mentoring relationship in the second year – '(as it is) an important part of their development as researchers'.

While the initial workshop set up the exploration of researching it became evident that having collected data, the analysis and writing up required a further workshop. It also drew a line in the sand and make participants present to their colleagues.

Discussion of learning so far

The findings in late 2009 indicate that the initiative has established a pathway for 21 new researchers, increased research capacity, generated a range of new researcher and mentoring resources, and facilitated the transfer of knowledge from experienced to novice researchers. The culture has been changed. Where participants have completed their project, mentoring has been equally rewarding to the mentors. There is now a growing pool of experienced VET research mentors in the community. The completed projects are adding to NCVER resources and several new researchers have presented findings at conferences. In each institution supporting a participant the profile of research activity has been raised. Coordination between AVETRA, VU and NCVER and senior researchers has realigned relations around a collaborative objective.

Cooke (2005) indicated guidelines for the construction of practitioner research capacity. This scheme development supports the components of her generic model (see page 3). The workshops and mentoring have built an *infrastructure* that is pursuing the simultaneous development of *skills and confidence through partnerships*, and through real projects that are close to the *field of practice*. The year-long cycle has provided a *learning continuity*, with the goal of *disseminating of findings* to the VET community. and the establishment of enduring infrastructure.

In response to the research questions, it has been the synergy of mentoring and community of practice workshops that has supported new researcher development. The impact of the first year has been primarily in establishing a framework and a pathway where non existed. The learning from this experience is in how more effective support and direction can achieve more successful participants completions.

The implications for stakeholders are multiple, but can be reduced to those that will have the greatest utility and impact on building research capacity. Participants need to be focused upon the timetable and outcomes from the start of their projects. Completion is all, in terms of their development, achievement and visibility in the VET community. Mentors need to sweep away higher degree models and focus on the action of doing a modest local project with continual encouragement. The project directors need to intensify their coordination and act with early intervention.

An interim conclusion
It is important to remember that this paper is just another document in the action research cycle of the project. Perhaps the most important document, as it is a very visible and public reflection that seeks, and will undoubtedly receive, critical feedback from all the stakeholders. Indeed, at the half way stage, it is perhaps appropriate to publish a reflective statement as the foundation of a seminal cycle of review for the project. The learning at this interim stage of the project *is fourfold*.

First, a pathway for new researchers has been established that can act as a bridge for reflective VET practitioners who want to move beyond managing and improving their immediate relational responsibilities. It is *a pathway* that legitimises their presence in the VET research community, indicating and placing a value on their role.

Second, we are constructing and operating a fragmented *relational network* that attempts to traverse a vast continent. It is a network that must incorporate face-to-face and virtual relations, to deliver pre-programmed and participant instigated interactions. It confronts the usual teaching dilemma of blending knowledge

dissemination with individual responsiveness. The blend of workshops and mentoring appears to provide the right opportunities to both learn together and to enable participants to instigate their own teachable moments.

Third, these initial cycles of learning have clarified what *knowledge and support is required*. The open structure has enabled the programme to respond to participant requests and to accept participant feedback. Understanding the goals of the project, the support structure, and the timeline for completion are a pre-condition for grasping instructional researching knowledge. A supportive environment enables participants to hold their heads together as they take their projects into unknown research territory. The mentoring manual has gathered these experiences and distilled them into guidelines.

Fourth, the project is clarifying the needs of all new VET researchers. However, as with all schemes there will be many new researchers that fall outside the timelines and quotas for such schemes. It would appear that now is the time to consider accumulating an accessible *repository of the accumulated knowledge* that will support new researchers, not just in their early research steps but being part of the VET research community. AVETRA is well placed to be the custodians of such a venture.

In terms of research this study also has the benefit of placing an action research project at the heart of the VET research community, emphasises the legitimacy, the benefits and the challenging nature of action research as a strategy. From one perspective a few people have thrown together a scheme and worked with it to get the structure right. From another perspective more than 300 years of VET research experience, (accumulated by the mentors and managers of the scheme), have been distilled into the relations of the past year and half to make it work. I am reminded of a quote attributed to Picasso, who after doodling while he was interviewed, was questioned about the morality of his two minute pencil marks now being now worth thousands. He responded that they were not the result of a few minutes work, but fifty years of study in his field. The VET research community has built significant structures in Australia over the past twenty years. Now, those experiences are being distilled and distributed for the next generation.

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