
Published 2010 by the
Higher Education Research and Development Society of Australasia, Inc
PO Box 27, MILPERRA NSW 2214, Australia
www.herdsa.org.au

ISSN 0 155 6223
ISBN 0 908557 80 9

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Utilising action research and enquiry processes to achieve sustainable academic development

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Action research and enquiry processes have been identified as successful ways to help change not only how people operate, but also to enhance their understanding of both the practices they use and the context they operate within. Members of the Academic Literacies Team at Unitec New Zealand (Institute of Technology) formed an action research enquiry group in 2009 to explore how to achieve effective sustainable change in embedding literacy, language and numeracy (LLN) into vocational courses and to investigate how this could be translated into their capability building and academic development work with vocational teachers. This research paper describes the first phase of a multi-project research study and sets the scene for further work in the second phase. It considers vocational tutors’ identities and investigates core aspects of academic development for vocational tutors. An overview of action research and enquiry processes in tertiary education is provided before the setting-up, processes and methodology of the current projects at Unitec are outlined. Conference participants will be asked to critique and share their own experiences, using action research and enquiry to inform processes for academic development and change processes. The author will share some of the issues encountered, as well as research results from the first half of 2010.

Keywords: academic development for vocational tutors; action research and enquiry; embedding literacy, numeracy and language skills

Background

A relevant and meaningful context provides an excellent basis for learners’ to enhance their literacy, language and numeracy skills (Casey, et al., 2006; Tertiary Education Commission, 2008). Embedding LLN into course content enables students to learn discipline-specific LLN skills as part of their subject. Vocational skills and content can be better understood, acquired and applied (Department for Innovation Universities & Skills & DfES/NRDC, 2004; Eldred, 2005). Deliberate acts of LLN teaching and assessment within vocational training significantly increase learning opportunities for all learners. Literacy and numeracy skills enable adults to participate in their communities and help individuals to achieve goals at work (Tertiary Education Commission, 2008).

Since the release of the Adult Literacy Strategy - More than Words in 2001, adult literacy capability and capacity building work has increased in New Zealand’s tertiary sector, backed by substantial government funding. Systems and resources which have been developed and are currently being implemented include the Adult Literacy and Numeracy Assessment Tool, the Learning Progressions and literacy focused tertiary teaching qualifications to improve professional development options (Owen & Schwenger, 2008; Owen & Schwenger, 2009).
At Unitec, the Academic Literacies Team (as part of Te Puna Ako – the Centre for Teaching and Learning Innovation) has been responsible for driving the initiative to embed LLN in programs across the institution over the last 20 months, with a focus on twelve programs at level 2 and 3. Achieving sustained change has been a main concern for the Academic Literacies Team, given the project’s limited lifetime, which has been extended until December 2010. In March 2009, members of the team formed an action research group to investigate mechanisms and explore actions that can help to achieve and maintain sustainable change in tertiary education contexts. This included looking at organisational change and educational reform theories to inform future actions and to make the step from “informed prescription” to “informed professional judgment” (Fullan, 2003, p. 6). In tertiary education, both teaching staff and management are essential stakeholders for implementing sustainable change (Ball & Cohen, 1999; Korthagen & Kessels, 1999). Lecturers’ acceptance, cooperation, backing of changes and commitment are essential to create an enhanced learning environment (Neal, 2008). Teachers can either be change agents or protect the status quo in the classroom (Cranton, 1996).

The process of building trust and relationships provides a strong basis for effective change and is as vital as knowing the development needs and existing skill levels of academic development participants (Owen & Schwenger, 2009; Schwenger, 2009). Equally important is to consider the background of teaching staff and their occupational identity (Chan, 2009).

**Vocational tutors’ occupational identity**

An occupational or professional identity in general is shaped through work-related education, which allows an individual access and participation in occupational communities (Seddon, 2008). Occupations are created as individuals work together, utilising an occupational knowledge. An occupational identity is created, within in an occupational culture. “Occupational identity and culture underpin an occupation’s dignity at work” (Seddon, 2008, p. 14).

The occupational identities of vocational tutors are complex because they are members of multiple communities. Vocational tutors often join tertiary institutes as occupational experts to teach in their specialised topics. They have to be well connected with their industry background, just as they have to know about teaching and learning. Besides being a teacher, they might be a carpenter, an early-childhood teacher, or a chef (Palmieri, 2004). Tutors can be reluctant to exchange “aspects of trades’ vocational identity” for “the complementary or synergistic identity of trades teacher” (Chan, 2009, p. 28). They might see themselves primarily as a trade person and secondarily as a teacher (Haycock & Kelly, 2009; Palmieri, 2004). However, vocational tutors also look positively at teaching as an opportunity to give back to their field of work (Chan, 2009).

Learning transforms perceptions and the identity of individuals (Chan, 2009; Giejsel & Meijers, 2005). As an individual’s identity formation is changed through conscious thought in daily life, shaping one’s identity (Giejsel & Meijers, 2005) can be described as an ongoing process that is re-negotiated throughout one’s lifetime (Billet & Somerville, 2004; Vähäsantanen, Hoekkä, Eteläpelto, Rasku-Puttonen, & Littleton, 2008). Research in educational change has shown the relevance of teachers’ values and attitudes regarding teaching and learning to be part of the factors that impact on classroom practices and on students’ academic success (McKenzie & Turbill, 1999; St John & Wilkens, 2006). Other important factors include personal learning experiences and the teacher’s identity (Ball &
Cohen, 1999; Chan, 2009; Lampert & Bell, 1999). Changes in the occupational identity of teachers can be achieved “when social construction and individual sense-making become closely related to each other “ (Giejsel & Meijers, 2005). Action research and enquiry processes can be powerful tools to achieve such proximity in academic development initiatives. How teachers perceive themselves in their occupational role and what they regard as important both influence their work with students and the teaching and learning processes that occur.

Providing academic development for vocational tutors

Academic development initiatives benefit from looking closely at their audience and by being aware how significant the processes of teachers’ occupational identity building are in terms of enhancing teaching and learning. As with learners, staff skill levels should be identified so that work can start at an appropriate level and participants do not feel threatened (Schwenger, 2009). Recognising tutors’ existing knowledge, skills and their varied literacies is also vital (Chan, 2009).

Professional development is regarded by many teachers as part of their normal working life (Grundy & Robison, 2004). Changing and impacting on practices seems to be a main focus of academic development work (Rust, 2009). The functions of academic development initiatives can be defined as:

- extending and building current knowledge;
- renewing and transforming ; and
- growing and developing existing expertise (Grundy & Robison, 2004).

Whilst the functions are tightly connected with the objectives of academic development, the systemic driver influences the content and availability of professional development initiatives. The aging of teaching staff is a factor that has influenced systemic professional development provision to achieve the transformation of old into new knowledge or to build on the skills teachers already possess. An example is the need to update ICT skills for teaching and learning purposes. In New Zealand and overseas, the embedding and integration of LLN has also influenced systemic provision considerably in recent years. The personal drive of an individual determines if they decide to participate and be engaged (Grundy & Robison, 2004).

What kind of academic development activities have an impact on existing practices and processes used by teachers? Neither distributing information nor lectures or occasional workshops are regarded as the most successful and efficient ways (Ball & Cohen, 1999, Lampert & Ball, 1999). Such activities seem to fail to engage participants, partly due to providers’ often limited knowledge of change processes and of occupational development of adults as well as due to a lack of understanding how adult learning can best be supported (Rust, 2009).

Successful academic development can be provided through different avenues and models. Examining others through peer observation and modelling can provide valuable opportunities (Neal, 2008). Well-combined theory and practice (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007) and opportunities for knowledge building, sharing and on-going discussion between the participants as well as time for trialling, practising and reflecting have been recognised as vital components of any academic development work (McKenzie & Turbill, 1999). A slower pace for discussions on personal sense-making is needed and people in general prefer to have such conversations with others they trust (Giejsel & Meijers, 2005). Social interactions and
conversations with colleagues are regarded as highly effective ways to support informal learning at work (Boud & Middleton, 2003; Haigh, 2006; Pankhurst & Livingstone, 2006; Wenger, 1998). “[It] both complements and can substitute for formal learning mechanisms.” (Boud & Middleton, 2003, p. 194). Action research and enquiry processes can offer flexible frameworks for informal learning to occur.

**Action research and enquiry in tertiary education**

As research-informed academic development initiatives can often seem unrelated to what is happening in the day-to-day work, action research and enquiry processes can be the vital connector between research, academic development and practices in the classroom (Rust, 2009). The practices used, and the understandings that have been developed as well as the conditions that shape practices are tightly connected. The three aspects influence each other and transform what one does, what one thinks or says and how one relates to others, things and circumstances around oneself (Kemmis, 2009).

Action research is a recognised scientific method to research and investigate. At the same time, it reflects the research action in daily life. However, the action research process requires more conscious, explicit, deliberate, systematic and rigorous actions as well as more careful documentation. Changed actions are part of the research process with further research concerning these changed actions and their effects (Wadsworth, 1998). It is assumed that more effective action can be taken by teachers when they conduct research on their practice together. They define the situation, collect and analyse relevant data, and develop alternative strategies to try out in the workplace. Individuals in separate locations can research together through scheduled meetings and email contact (Cranton, 1996).

Other benefits of action research and enquiry processes include that action research cycles help to test ideas and concepts as they provide opportunity for feedback (Holian, 1999). It is a personalised and contextual research process that allows discovery rather than instruction through an outside source (Scott & Weeks, 1998; Wadsworth, 1998) and enables teaching staff to enhance their research capability whilst working on aspects relevant to their teaching and learning practices (Piggot-Irvine, 2009).

As a research process, it is empowering since teachers are not researched but instead are able to work through processes and explore solutions themselves (Cranton, 1996, Rust, 2009). Generating their own results can also help to counteract disbelief of relevance about academic research (Groundwater-Smith & Dadds, 2004). Furthermore, the likelihood that the generated results will be shared with colleagues is greater, as self-directed research creates a higher motivation. Moreover, the results as well as the process are owned by the participating teachers (Cranton, 1996).
Utilising action research and enquiry processes as part of academic development initiatives means being aware of potential risks and tensions. These can arise due to expectations of change by participants, the private nature of the research process or because of the method of facilitation. Additionally, debatable and contentious practices can become visible. These need to be confronted and worked through (Groundswater-Smith & Dadds, 2004).

**Embedding LLN sustainably at Unitec**

Unitec’s embedding work is research-based and aims to take into account the New Zealand context and its requirements. Academic advisers work alongside faculty members to support the process of embedding and capability building whilst monitoring the successful translation into students’ learning experiences. All members of the Academic Literacies Team have previously worked in language and adult literacy disciplines; some have a vocational work background as well as literacy expertise.

Unitec’s *Embedded Language, Literacy and Numeracy Plan* includes capability building as one of its six core elements, with the following academic development goals for teaching staff:

- integrate LLN into course learning outcomes, documentation, learning and teaching resources, and assessments;
- recognise learners’ needs and be familiar with the course demands;
- deliberately teach LLN explicitly linked to vocational content; and
- increase reflection around teaching and learning principles and practice (adapted from Smith, 2008).

The academic development initiatives offered at Unitec as part of the embedding initiative have included ‘Tradeshows’. These events have been offered as a series and are connected with other professional development activities, such as working alongside vocational tutors through regular meetings. The format has included social fora, workstations for tutors to trial strategies and learning tools in small groups as well as short segments of whole-group sessions. The evaluation of the stages of the ‘Tradeshow’ approach has shown its effectiveness for supporting changes, such as shifts in attitude and beliefs towards embedding LLN, helping staff to realise that teaching LLN explicitly combined with vocational content helps students to learn better in their vocational field and to utilise new tools and strategies (Owen & Schwenger, 2009).
Crucial to the success of the implementation to date has been the open recognition of the work and the time demands needed in the initial embedding phase as well as acknowledging the LLN work already performed by staff. Working closely alongside staff has been instrumental to establish and maintain relationships as essential building blocks for enhancing the educational practices within a tertiary education provider (Schwenger, 2009).

Measuring and evaluating the impact of embedding LLN on student learning outcomes in terms of retention, progression and completion in a quantifiable way is required to prove the long-term benefit of the embedding efforts. It is too early to provide such quantifiable organisational level data of the impact on tertiary student outcomes in New Zealand, according to a yet to be published government synthesis report by the National Centre of Literacy and Numeracy for Adults at the University of Waikato. Anecdotal evidence includes greater student confidence in the classroom, when working with texts and a stronger student willingness to ask questions to further understanding. Vocational tutors at Unitec have also reported a higher retention and completion rate for individual courses within programs that the team has worked with in the last year, such as Electrotechnology and Animal Care.

Other work by the team includes working alongside vocational tutors for the identification of course demands and student needs, improving course design and the rewriting of programs and course documents with embedded LLN. Additionally, certain programs have been supported as they change to a blended e-learning approach whilst taking into account the literacy and numeracy skill levels of their students.

**Utilising action research processes for embedding work**

In March 2009, members of the Academic Literacies Team formed an action research group, and started to identify core research questions, shared the literature between team members, consolidated information and distributed findings across Unitec. The preparation phase during 2009 was essential for building and consolidating team members’ knowledge and skills in the practical application of action research and enquiry processes. It was also invaluable for sharing and planning LLN embedding and capability building work. The research outcomes have been used to build a solid foundation for the embedding efforts. At Unitec, action research and enquiry processes have provided a flexible methodological framework for a multi-project approach in 2010, with the overall aim of achieving sustainable change in embedding LLN and in capability development of academic staff.

Two proposals by Unitec staff members have been accepted as part of the National Action Enquiry Project *Embedding LLN in vocational qualifications* led by the University of Waikato. These projects commenced in the first semester 2010. The main focus of the Department of Labour enquiry project is to find out more about what happens to tutors’ teaching practices and learners’ academic success when LLN are embedded into vocational learning programs. The objectives include investigating:

- successful processes to embed LLN into learning programs;
- the benefits for teachers, the learners, and the ITPs; and
- emerging issues and challenges and potential solutions.

The individual action research projects look at the nature and outcomes of specific teaching interventions. Whilst the projects help individual teachers to reflect on and enhance their personal teaching and learning practices, data is generated to inform future government-funded LLN initiatives.
One of the Unitec projects takes place in Electrotechnology. Based on work already conducted in 2009, including the design of the Sliding Gauge as a teaching tool for place value, this study aims to identify and evaluate how the Sliding Gauge can help raise students’ numeracy skill levels. Using the learning and teaching cycle of initial assessment, instruction, formative assessment, instruction, summative assessment, the teachers use a specific teaching tool, called the Sliding Gauge, to work with students on improving their numeracy skills in the classroom, using topics that are part of the curriculum. In addition to this cycle, interviews will be held with students who consent to be part of the research study.

The second project is concerned with how best to support students’ learning and retention of the disciplinary scientific language of Animal Care which is unfamiliar to most students. In 2009 students in groups created animated definitions of technical words and shared these with their peers. This research aims to continue to develop this strategy with students researching definitions and using innovative ways to share the definitions with their study colleagues. The tutors provide quizzes to find out which words are perceived as difficult and later in the semester for students to check how they can now work with previously identified words as well as new words, using new learning strategies. Following this, semi-structured interviews with students who volunteer to participate will be held at the end of Semester One to gather their perceptions of the usefulness to them of this activity. Semi-structured interviews will support the data-gathering (Nicholson & Dale, 2010).

The Academic Literacies Team is working with staff in Automotive, Foundation Studies Nursing and Music programs, as well as with the information literacy librarian to set up their own action research projects. All projects are concerned with a course-specific reading or writing LLN issue that has been previously identified as being relevant for student success. The library project is researching accessibility of the online information literacy tutorials for students in a business communications course. Another project investigates ‘Does teaching reading comprehension strategies in a music studies course with LLN embedded improve students’ comprehension of text and critical thinking abilities’. Further projects research the success of certain teaching interventions for writing a case study and whether students’ blogging improves their writing.

Simultaneously, the team has set up a meta-evaluation process which allows the tutors involved to evaluate their experience of action research and enquiry processes as a means of sustainable change. The meta-evaluation captures impressions through email contact as well as with questionnaires and interviews. The questions aim to ascertain the effectiveness of previous professional development and of action research as experienced by the tutors as well as their personal views of the teacher role and whether they feel the action research process has changed the way they see themselves in the classroom.

**Implications**

Vocational tutors involved in the action research projects have started to recognise the value of using action research and enquiry processes to investigate specific LLN issues and the impact of interventions. A number of participating tutors have recommended that it would be highly beneficial for more staff to develop action research and enquiry projects around an LLN issue pertinent to their specific teaching situation. Conversations regarding occupational identities and how vocational tutors see themselves and others have started between some of the participants in the shared meeting times. The meta-evaluation will provide results relevant to Unitec’s vocational teaching staff as a group, however, it is to be expected that the final
research results will also highlight existing differences between individuals. It has already emerged that teaching staff from different disciplines have different views on their role as a teacher.

Not all of the project participants have previous research experience, and going through the research process steps, for example, applying for ethical consent has included challenges and new opportunities to increase the research capability of everybody involved. Identifying an LLN issue pertinent to their teaching situation and then following the steps of the action research process of planning an intervention, action, observing and reflecting, is a new experience for all participants. More insights are being gained as staff work through the project process and by midyear 2010, further results and details can be shared, for the individual projects as well as for the meta-evaluation.

One of the challenges for the Academic Literacies Team is to evaluate how to best support collaborative ongoing conversations amongst vocational teaching staff regarding the embedding of LLN and the projects already underway. Additionally, it is essential to investigate how action research and enquiry processes can assist vocational tutors to explore relevant topics around LLN whilst allowing space for sense-making on a personal level.

It is hoped that the meta-evaluation will help to increase knowledge on effective ways to support vocational teaching staff in developing their occupational identity as teachers of vocational content and the relevant LLN skills. Current knowledge of vocational tutors’ scholarship of teaching and learning would benefit from further research, for example how individual identity changes are connected with student achievement.

Conclusion

The Academic Literacies Team plans to help staff in further programs and services at Unitec to develop their own action research and enquiry projects in the future. Whilst it seems certain that workshops, lectures, online self-study and other conventional formats of academic development will continue to be offered, there are a number of potential opportunities where action research and enquiry processes could offer engaging and relevant development options. The team would like to create a culture where vocational tutors regard working through an action research and enquiry process based on a relevant LLN issue as a normal part of their academic development at Unitec. From the foundation laid by the work since March 2009, it is hoped that vocational tutors and the Academic Literacies Team produce a number of conference contributions and journal articles that will help to inform the growing field of embedding LLN as well as contribute to a wider usage of action research and enquiry processes in study programs at levels 2 and 3 in New Zealand.

This research paper has described the first phase of a multi-project research study, with a focus on setting the scene. The paper has utilised questions around vocational tutors’ identities as part of its investigation of aspects to be considered when offering academic development initiatives for vocational tutors. The study has provided an overview of action research and enquiry processes in tertiary education before outlining the projects that are underway at Unitec.

Whilst the project is only one of many academic development initiatives currently taking place at Unitec, it is expected that its outcomes will provide invaluable insights for future work and research with and by vocational teaching staff.
References


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