The Student Experience

Proceedings of the

32nd HERDSA Annual Conference

6-9 July 2009
Darwin, Australia


Published 2009 by the
Higher Education Research and Development Society of Australasia, Inc
PO Box 27, Milperra, NSW 2214, Australia
www. herdsa.org.au

ISSN: 0155 6223
ISBN: 0 908557 78 7

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Supporting academic development to enhance the student experience

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Students' learning experiences and study success can be significantly enhanced through a combined approach that embeds Literacy, Language and Numeracy skills enhancement explicitly into discipline content. An essential aspect of this approach is the provision of academic professional development that is engaging and helps staff review their methodology in a supported and sustainable manner.

This paper describes stage one of a pilot research study and ongoing initiative between one of the vocational disciplines (Automotive Engineering, which is part of the Unitec Applied Technology Institute) and the Academic Development Unit at Unitec New Zealand. At this stage, using a 'Tradeshow approach', fifteen Literacy, Language and Numeracy related tools and strategies, as well as mini-demonstration teaching sessions, have been chosen as a way to introduce and discuss effective practice in collaborative and contextualised professional development sessions.

The findings from a pilot study around the Tradeshow approach, including the iterative cycle of evaluation and improvement in response to participant feedback, are shared. The study has helped identify and evaluate how this new capability building approach has assisted with supporting and motivating discipline specialists in their initiatives to embed and add value to students’ learning experiences and study success.

Describing a number of key strategies and tools, this paper will discuss the results of the study as well as lessons learned and associated implications.

Keywords: professional development; embedding literacy, numeracy and language skills; strategies

Introduction

Students' learning experiences and study success can be significantly enhanced through a combined approach that embeds Literacy, Language and Numeracy (LLN) skills support explicitly into discipline content. The term 'support' in this paper refers to the scaffolding of students within a course to meet literacy and numeracy challenges/requirements, as opposed to formal, remedial workshops, sessions or resources.

An essential feature of embedding LLN support into programmes is the provision of opportunities for staff to engage in academic professional development (PD). Ideally, this PD should 1) assist educators to review their methodology, 2) aid the implementation of LLN...
support through everyday teaching and learning strategies, 3) introduce tools and strategies for embedding LLN, and 4) enhance managers’ and educators’ efforts to incorporate effective practice into course and curriculum design.

This paper describes a pilot research study that will inform the design and implementation of a research study to be conducted in 2009. The pilot study explored the effectiveness of what was termed the ‘Tradeshow’ approach to PD, which is an ongoing initiative between one of the vocational disciplines (Automotive Engineering, Unitec Applied Technology Institute - UATI) and the academic development unit (Centre for Teaching and Learning Innovation - CTLI) at Unitec New Zealand (NZ). CTLI is working closely with managers and tutors to introduce strategies and tools that can be integrated into courses and curricula whilst remaining flexible enough to be tailored for specific learners and programmes. At this stage, as part of the collaborative and contextualised Tradeshow PD sessions fifteen LLN related tools and strategies, sourced from a variety of places, as well as mini-demonstration teaching sessions, have been used to introduce and discuss best practice. The findings from the pilot study (including the iterative cycle of evaluation and improvement in response to participant feedback) will be shared.

**Literacy and numeracy as key competencies**

Hall (1996) stresses the fact that we now live in the information age where “the key component is no longer the material product itself, whether agricultural or industrial, but the information which gives us the wherewithal to think, understand, create, renew, maintain, and adapt within many different material and cultural contexts” [italics in the original] (p. 27). The LLN competencies required by individuals thereby directly correlate with the LLN demands of their daily life and work (Collingham, 2005). LLN skills can be described as foundation or key competencies that enable the learning of more specialised or generic skills and disciplines. The Tertiary Education Commission (TEC) (2008a) in New Zealand identifies a range of contexts in which these LLN skills are required including education, work, home and social settings, where people may, for example, be required to analyse and synthesise information, manage the operation of complex machinery, work as part of a team, and help others with their learning. In other words, a high level of literacy has increasingly become a prerequisite of social, economic and educational success.

Recognition that learners' LLN skills form a continuum that encompasses the spectrum from no or basic skills, to skills that are developed enough to meet the challenges of a particular programme, has been instrumental in learning outcomes being designed to focus on overall learner development and community participation, as well as discipline content (Ministry of Education, 2001). The definition of literacy below reflects these factors, and is therefore used in this paper.

> **Literacy** is the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning to enable an individual to achieve his or her goals, to develop his or her knowledge and potential, and to participate fully in the wider society (United Nations Educational Scientific and Cultural Organization (UNESCO), 2003, p. 5)

Literacy and associated skills are part of a complex, dynamically interconnected construct (see Figure 1). A learner’s opinion about the value of literacy, for instance, can be influenced
by their family, community and religion, as well as their social and educational background (Brindley, 1989). These factors can, in turn, affect the acquirement of literacy skills (Hipple, 1985).

Background to LLN in New Zealand

Two Adult Literacy and Life Skills surveys conducted in 1996 and 2006 respectively, as well as an analysis by the Ministry of Education based on the 2001 census, indicate low LLN skill levels for a significant part of New Zealand’s population. Stating a total figure of 1.18 Million participants, it has been estimated that 461,800 undertake tertiary education (Culligan, Sligo, Arnold, Noble, 2005 as cited in New Zealand Qualifications Authority Overarching Quality Assurance Unit Strategic Development Group, 2006).

The assimilation and application of the content and skills of vocational programmes, when LLN development is embedded as an integral component, can be enhanced significantly (Casey et al., 2006; Department for Innovation Universities & Skills, 2004; Eldred, 2005). Furthermore, students’ development of LLN skills is more effective when they are assisted within their specific discipline or industry (Casey et al., 2006; Skillen, Merten, Trifett, & Percy, 1998). With the release of the Adult Literacy Strategy *More than Words* in 2001 and the provision of financial backing, several initiatives to embed LLN have been implemented in the tertiary sector. These include increased literacy learning opportunities and services, the development of the New Zealand Learning Progressions and related resources, as well as PD options and career pathways for practitioners. At Unitec NZ literacy and numeracy are being embedded into level two and three vocational programmes. Teaching staff are knowledgeable in their respective discipline, but their work in explicitly embedding LLN, and thereby assisting students, often requires assistance.
Features and success factors of embedding literacy and numeracy

Research into tertiary PD around the successful embedding of literacy and numeracy indicates that the following factors are key in effective implementation (McKenna & Fitzpatrick, 2005):

- practitioners' capability / experience;
- recognition of LLN demands in associated industries;
- activities that explicitly use the industry language model;
- use of appropriate tools / effective practices;
- socio-constructivist underpinning to teaching / learning approaches;
- consideration of participants' context(s), attitudes / beliefs (such as willingness of teachers to engage with content taught by their colleagues); and
- design of curricula that recognise learner needs.

Successful embedding, however, requires more than synthesising the features identified above. For example, “staff development is a critical factor in achieving…sustainability” (Rosenberg, 2007, p. 9), as is the commitment to new initiatives within an institution (Casey et al., 2006).

Academic Literacies at Unitec NZ

The Academic Literacies team at Unitec NZ is responsible for academic literacies across all levels taught in the institution, but at this stage mainly deals with LLN at levels 1-3 utilising the following principles:

- students require induction into the academic culture;
- literacy requirements should be as explicit as possible;
- enculturation is best achieved by discipline experts in an authentic context;
- stakeholders must be convinced that LLN integrated in discipline areas is pedagogically sound, useful, valid, and achievable;
- staff need to be supported through a range of appropriate tools and PD; and
- a whole organisation approach is necessary. (Adapted from Smith, 2008)

These aspects have to be integrated into PD initiatives to nurture a sense of consistent and continued community effort, to ensure time release for training and for resource development (Moser, 2007), and to offer relevant, accessible training.

Professional development in educational contexts

Research has shown that several factors contribute to students’ improved academic success (St John & Wilkerson, 2006). These factors include teachers' classroom practices, belief systems, and values around teaching and learning, as well as their understanding about the nature of embedding literacy (McKenzie & Turbill, 1999). Teaching practitioners can be scaffolded through PD, but it is a process that requires long-term dedication from facilitators and participants. Academic PD also needs to blend theory and practice (Ball & Cohen, 1999; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007) in a flexible manner that acknowledges personal teaching theories, while being cumulative, sequential, relevant, accessible, and allowing opportunities for discussion and knowledge creation with a strong foundation of ongoing support. Encouragement of reflection, trial and practice in a 'safe' environment,
sharing of experiences, small group collaboration and trialling new instructional strategies can be included (McKenzie & Turbill, 1999). Staff may also be encouraged to adopt new pedagogies, technologies, tools, and vocabulary by the influence of ‘champions', and the ‘viral’ effect of sharing effective practices (Moses, 1985).

Therefore, PD sessions that are focussed around the embedding of LLN should include the following aims (Moses, 1985; Smith, 2008):

- understand what LLN can comprise;
- learn about LLN support;
- change of attitude towards LLN support;
- identify LLN aspects of vocational disciplines;
- understand value of LLN as an integral part of vocational course content;
- foster effective teaching, learning and assessment in everyday practices;
- evaluate a variety of (relevant) tools and approaches to LLN support;
- introduce tools / effective practice that they could be employed in teaching practice; and
- apply LLN teaching theory to students and classrooms (critically, creatively and practically). (Smith, 2008).

Staff professional development at Unitec NZ

Professional development at Unitec NZ has been offered in a variety of formats. For example, in 2007 CTLI offered a series of Unitec-wide workshops including 'Introduction to teaching and learning at Unitec', training on the learning management system (Blackboard), and the 'Exploring learning technologies workshop' series. Workshops were offered to the whole institution, were not discipline specific and took a more traditional format whereby disparate groups came together in a classroom setting for a period of time (ranging from an hour to several days) (St John & Wilkerson, 2006). Through the collection of feedback, reflection and observation CTLI identified a number of problems with these types of workshop:

- short workshops did not encourage participants to form lasting learning communities;
- when a staff member became enthusiastic about an initiative or skill, occasionally lack of encouragement from peers led to a sense of isolation;
- even when workshops used collaborative, group work there was little shared knowledge construction, ongoing collaboration and problem solving;
- short exposure to a skill and / or tool gave a surface insight into how, when and where to apply it;
- skills learned in the workshops were often not used and thus forgotten;
- the relevance of what was being learned to a specific discipline was often not immediately obvious (for example, an architect may be shown how a tool could be used to support a learner studying horticulture), thus blurring questions of feasibility and relevance; and
- timetables, location and workload made it difficult for staff to attend workshops.

In response, CTLI have altered their approach, partly by implementing support informed by sociocultural principles. In the ‘Working with Schools’ initiative pairs of academic advisors have been nominated to schools. The pairs work closely with their schools, encouraging formation of Communities of Learning (CoLs), and providing contextualised, discipline-specific workshops at the request of each school, ‘just in time’ training and support (Moses, 1985), team teaching, and forums for knowledge sharing/exchange.
The pilot research study

This section describes a small-scale pilot research study initiated by the Academic Literacies Team and CTLI. The Academic Literacies team has been working alongside CTLI education-technology academic advisors using a collaborative approach to design PD sessions that attempted to assist faculty to embed and offer LLN support. Aims of the study included informing the design a larger scale study that will be conducted in 2009, as well as contributing toward Unitec’s regional and national contribution to providing LLN support in tertiary education and the workforce. Furthermore, the study was designed to help identify and evaluate the stages of an alternative ‘Tradeshow’ approach towards PD that would, ultimately, add value to students’ study experiences. The iterative design of sequential PD sessions actively sought input from UATI participants, which in turn would shape future directions to be taken in the ongoing work with the school as well as with other disciplines. Data collection tools included a questionnaire, formal documents, and notes taken during meetings.

The ‘Tradeshow’ approach to PD sessions

Three PD sessions have been offered to date to staff teaching on the Automotive Programme - UATI (see Figure 2). A steering committee, comprising representatives from senior management and Capability Building, made recommendations about the possible design of support that could be offered to faculty. Furthermore, a ‘champion’ for LLN within UATI made contact with the Academic Literacies team, and with strong managerial backing, he worked with a literacy expert who had been seconded to the department to provide student assistance and staff support. It was identified that teaching staff, who are experts in their respective trade discipline, required training and support to scaffold the process of embedding LLN. Challenges included a necessary shift in beliefs and practices. UATI staff voiced a range of concerns; for example, uncertainty about the meaning of literacy, and what embedding into already extensive curricula might comprise. Feelings of discomfort were expressed as staff was concerned about being considered ‘language’ teachers and observing that the secondary education system seemed deficient in the teaching of LLN skills.
During the design phase of PD sessions it was identified that group discussions of issues (such as the role literacy and numeracy play in learners’ vocational success) would be efficacious, but that these should be facilitated in semi-formal sessions. Furthermore, there was a need to encourage interactive, collaborative knowledge sharing, and possibly instigate the formation of groups that would grow into CoLs. As such, for the first PD session the design team developed a ‘Tradeshow’ approach which utilised a series of six hands-on ‘workstations’, each encapsulating effective practice. Workstations had different facilitators, who used a range of different tools and formats (including text, audio, video and images) to help engage participants. Tools and strategies were selected according to specific underpinning theoretical principles (see Figure 3). Thus, for example, a lesson plan template was used to illustrate the integration of LLN skills by highlighting connections between activities, their purpose and the embedded LLN skills, thereby providing a framework for possible activities and interactions. Workstations were conceptualised, dealing with authentic automotive texts, vocabulary and resources that were already in use in UATI thereby drawing on discipline practices, expertise, and specialised vocabulary. The Tradeshow PD session was trialled on the 11th June 2008 with forty-five teaching staff from the Automotive Programme. The two-hour session was organised into three main segments (a social forum, a large-group session, and workstations). Discussion and feedback relating to what was being showcased on each workstation was encouraged and there was an aspect of interactivity at each. For an hour groups of six rotated every ten minutes to a different workstation, taking away a handout for future reference. In addition, tools showcased at each workstation formed the basis of a toolkit hosted in Blackboard to which staff has access. Tradeshow PD sessions two and three
were designed around feedback from Tradeshow one, and are therefore discussed in the results section below.

Figure 3: Underpinning principles for selecting strategies and tools (Owen & Schwenger, 2008)

**Results**

Feedback to the first Tradeshow was variable. The social forum offered by the breakfast was appreciated and identified as important when providing a PD experience that sat outside usual workspaces. Participants stated this was because they felt the institution was investing resources in supporting them, thus indicating the value placed on LLN and on faculty themselves.

A number of participants were openly receptive, engaged and keen to try out resources. Conversations at workstations were often lively, and included concerns such as knowing the range and abilities of students who were studying in the Automotive Programme. Discussions also included specific issues faced in the Automotive Programme, as well as more controversial wide-ranging problems that were historical in terms of the institution rather than being about literacy *per se*. Some Tradeshow workshop participants remained reserved and cautious about perceived expectations, but still seemed positive about the actual Tradeshow format. Comments revealed a growing awareness that the provision of LLN support could in turn make their teaching easier, because, for example, students would be *au fait* with terminology. The main recommendation was to continue to offer contextualised workshops with a strong practical focus.

Based on the results of Tradeshow PD session one, the need to work more closely with UATI teaching faculty was identified, thereby giving them a ‘voice’ and opportunity to share opinions. This requirement was addressed by a series of meetings, which were arranged with six nominated UATI staff. As well as giving invaluable insight and input about what they and their students needed, they also identified a range of possible skill areas to be covered in the next PD session. The format of the second Tradeshow (facilitated on 4th August 2008) was
designed for small group interactions as well as having short segments within a large group session, all of which focussed on various aspects of vocabulary (see Figure 2). Feedback from the session ranged from the usefulness of resources provided to excellent teamwork on the day. The positive influence of LLN support on students' vocational success was increasingly recognised by participants and a shift in some participants' attitudes towards LLN integration was noticeable.

The format of the third Tradeshow PD session (facilitated on 30th October 2008) included an initial large-group introduction to accessing texts followed by demonstration lessons, all centered around the same script (see Figure 2). Strategies for introducing a new text (before, during and after), as well as alternative ways of providing numeracy support, were showcased and discussed throughout the two-hour session. A questionnaire (called the 'five-minute feedback form') was administered on paper at the end of the third Tradeshow PD session by a neutral facilitator and participants were invited to voluntarily complete the evaluation after reading an information sheet. Thirteen respondents chose to complete and return the questionnaire, twelve of whom found the Tradeshow PD session useful or very useful, and one who returned a neutral response. When asked if they had used tools and strategies from the three Tradeshow PD sessions four responded 'no' and nine responded 'yes', and went on to identify which tools and strategies they had used. Most used were strategies for introducing new texts and vocabulary, ways to facilitate numeracy support within teaching and learning sessions, and ICT tools such as Hot Potatoes for quiz construction. The open-ended responses included comments about the:

- direct impact strategies introduced in the Tradeshow PD sessions have on learning and teaching experiences - "The three sessions has [sic] generated other ideas in making classroom presentation more lively, better understanding and good feedback from the student regarding different topic areas....", and "It engages students during the learning process";
- design of the Tradeshow PD sessions - "I liked short sessions - too long hinders concentration", "Does not help me at all" and "Make it more relevant";
- timing - "Offering more seminars more frequently";
- social forum provided by the context - "Breakfast, friendly, laid back"; and
- general embedding of LLN into Automotive Programmes - "Get more people involved".

**Implications**

Lecturers have started to recognize that deliberate and explicit acts of LLN teaching enhance students’ success in their vocational studies, and the Tradeshow PD sessions have been useful in giving teaching staff ideas about how to provide LLN support. Some participants have started to employ more than one of the tools and strategies introduced within their classrooms. These results imply that a shift in attitude and beliefs has started and that the Tradeshow as a capability building approach provides a new avenue to effective PD regarding embedding LLN into the vocational content at Unitec NZ.

Sharing effective practice, tools and strategies, partly through PD sessions, is an excellent way to engage staff in a new teaching and learning initiative. Such a process tends to be slow and gradual due to the human factors involved and the fact that quick fix ‘solutions’ to attitudinal shift do not exist. A prerequisite to the development of any meaningful initiative is the building of relationships between the teaching staff concerned and their academic development colleagues.
Implications to date indicate that initiatives that seek to effectively integrate LLN must combine all of the factors identified in Figure 4 if any meaningful, sustainable uptake is to be achieved. For example, it is essential teams have a shared vision to enable consistent, positive progress, and ownership is best achieved in collaborative, supportive teams where initiatives are driven internally. Faculty should therefore have input into initial research, planning and decision-making, educational philosophies, identification of their own and of student needs, design, choice of tools, resources, and the piloting of innovations developed. Credible ‘experts’ need to facilitate and support the process, alongside timely PD and technical support, just-in-time training, problem solving, and all-important release time. 'Champions' within the disciplines are vital to support the planting of initial seeds of new thoughts and spreading ideas. These aspects are, however, only parts of a much bigger picture. A range of other influences, at institutional and/or governmental level, including conflicting messages, can affect the results of any initiative.

![Figure 4: Interdependent factors for effective LLN embedding](image)

**Conclusion**

Applying what has been learned from these initial Tradeshow PD sessions, the Academic Literacies team and CTLI plan to develop similar sessions for all schools. In the future, the PD series can be broadened to include work on using diagnostic assessment processes more effectively, integration of individual learning plans, and formative assessment practices. Furthermore, the Blackboard toolbox will be expanded and staff offered training for specific tools. From the foundation laid by the Tradeshow PD sessions, it is hoped that CoLs will form
to share knowledge through forums and in turn help facilitate collaboration between vocational and literacy specialists.

The Tradeshows workshops are one of many initiatives at Unitec NZ that are currently being implemented to support the embedding of LLN skills and learning competencies. This paper has outlined recent work to provide, what promises to be in the long-term, effective PD sessions for Automotive staff undertaking the task of embedding LLN support into their courses, which in turn will affect student learning experiences and success. Such PD sessions need to be interconnected and sustained to support staff and student attitude and belief shift. Building relationships with Automotive staff has also been essential in addressing initial concerns, defining literacy and creating collaboration. A growing awareness of the benefits of embedding has helped to open doors for further contextualised work within the Automotive department and other disciplines.

References


