

Addressing The Literacy And Numeracy Needs Of Workers Through Training Packages: A Case Study In Delivery

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Introduction

In the new Australian economy, it is widely recognised that literacy and numeracy are vital underpinning skills for effective and efficient training. Workers wanting to improve their skills and qualifications may require literacy and numeracy support, and this applies not just to basic skills but also to complex tasks with their associated embedded complex literacy and numeracy skills.

This paper presents a case study of delivery of integrated literacy and numeracy in a Training Package. The paper considers the question: To what extent is the delivery of integrated literacy and numeracy in Training Packages addressing the literacy and numeracy needs of workers?

Literacy and Numeracy as Social Practice

Literacy is recognised as social practice (Fairclough, 1989; Gee, 1990, 1996, 1999; Lankshear and McLaren, 1993; Street, 1995; Barton and Hamilton, 1998), integrated or embedded in the social context (Baynham, 1996). The multiplicity of literacies for different purposes in different contexts has come to be known under the heading of 'multiliteracies' (Cope and Kalantzis, 2000). The workplace involves its own particular kind of literacy. Like other literacy practices, those of the workplace change, and new workplace literacies are acquired through processes of formal and informal learning and sense making (Barton and Hamilton, 1998).

Perceptions of numeracy parallel those of literacy. Varying numeracy skills are required to deal 'systematically [with] problems of concern in everyday life and [to] better understand the physical, economic and social environment in which we live' (Crowther, 1959, quoted in Cumming, 1996, p. 11).

Freebody and Luke (1990) and Luke and Freebody (1998) make the point that 'literate' people adopt four 'resource roles'. These four resource roles are: code breaker, meaning maker, text user, and text analyst.

The 'Code breaker' role includes basic skills associated with knowing the technology of the written symbols of the language, and understanding the relationship between spoken and written symbols. The 'Meaning maker' role involves learners bringing their technology of code-breaking to the different structures of the various types of texts they encounter and the experiences portrayed in those texts. There is a matching up of the learners' own knowledge of the topic with a knowledge of textual structures. The 'Text user' role means that, in addition to participating in texts, learners must also assume the role of using texts in variety of situations, each with a different socio-cultural purpose. The 'Text analyst' role involves learning how to examine texts critically in order to gain understandings about sub-surface influences and themes and to find out why texts are written in particular ways to achieve particular effects.

Literacy and Numeracy in Training Packages

Literacy and numeracy are considered to be vital underpinning skills for effective and efficient training (DEETYA [Department of Employment, Education, Training and Youth Affairs], 1996; Fitzpatrick and Roberts, 1997; ANTA [Australian National Training Authority], 1998). Literacy and numeracy components of tasks are integrated into all aspects of working life, involving skills both at a basic level and those required for more complex tasks (Askov and Aderman, 1991; Courtenay and Mawer, 1995). The connection between literacy and numeracy and job performance is highly complex (Hull, 1993, 1997, 1999, 2000).

The intersection of literacy and numeracy in the vocational education and training (VET) sector was supported by ANTA throughout the 1990s. The integration of language, literacy and numeracy competencies in national Training Packages has been ANTA policy since 1995, following the decision that relevant underpinning literacy and numeracy skills and knowledge would be embedded in the core competencies specific to each industry sector (ANTA, 1998; Fitzpatrick and Roberts, 1997).

The training package approach is an integrated or 'built in' one (Wignall, 1998), as opposed to separate provision of literacy and numeracy in classes or one-to-one tutoring. This is in line with research on transferability of skills, which suggests that the literacy and numeracy skills required for tasks integrated into the workplace context are believed to be more effectively acquired not in a separate learning or training context, but actually on the job, and on the work task (Mikulecky, 1988; Askov and Aderman, 1991).

Issues of literacy and numeracy in the implementation of training packages were a primary focus for the Adult Literacy and Numeracy Australian Research Consortium's (ALNARC) 2000 research program (Haines and Bickmore-Brand, 2000; Kelly and Searle, 2000; McGuirk 2000; Millar and Falk, 2000; Sanguinetti, 2000; Trenerry, 2000). The recurring themes included concerns about practices of training provision, quality of trainers, the implicit (as opposed to explicit) inclusion of literacy within Training Packages, funding issues and access and equity issues. Many of the findings concern provision in the context of change, where the stated policies relating to training packages, particularly those around the 'built in' approach, are not as yet being reflected in practice with any degree of generality. The research suggested that literacy goals should be more clearly articulated and reflected in Training Package content. These findings were confirmed by Wyse and Brewer (2001) in research about language, literacy and numeracy and assessment processes.

From this overview of the literacy, numeracy and vocational education and training context, the paper now moves to describe the methodological component of the research.

Methodology

This project presents a case study of delivery of integrated literacy and numeracy in a Training Package. It poses the question as to whether delivery of integrated literacy and numeracy is addressing the literacy and numeracy needs of workers.

A number of research questions were developed for the project. The first of these was:

1. What might be a holistic structure and process for good practice in delivery of integrated literacy and numeracy in Training Packages?

The Workplace Learning Services (WLS) model (Crothers 2001) in Tasmania was selected for trialing as representing an existing and well-refined synthesis of good practice, and documentation of the structure and process of this model was commissioned. The purpose of this stage was to generate a model for trialing and simultaneously to trial a case study of actual practice against the principles of that model.

The case study selected to test against the model is described in full in Mitchell (1999 and 2001).

Two further research questions were then developed:

2. How are 'literacy and numeracy' understood in the design and implementation of the WLS model?
3. To what extent does this model address the multiliteracy practices needs of trainees in the workplace?

The project adopted a case study approach, employing qualitative analytic procedures (Lincoln and Guba, 1985). Using an adaptation of the 'four resource roles of the literate person' (Freebody and Luke, 1990; Luke and Freebody, 1998), an evaluative framework was then developed in which the data from Research Questions 1 and 2 could be matched along the two axes of Media of Communication and Roles of the Literate. The resulting matrix would be used as a basis to form an answer to Question 3.

Findings

Training Packages specify outcomes, in terms of endorsed competencies and standards; they do not specify educational methods or the multiple ways the goals may be reached. The impact of integrated literacy and numeracy in Training Packages is determined in large part by the ways educators use them.

The WLS Model

The incorporation of literacy and numeracy competencies into Training Packages was intended to ensure that literacy and numeracy would be 'built in' to work tasks, not 'bolted on' or separately taught. Our examination of the Workplace Learning Services model (WLS) finds that it is committed to the 'built in' approach. The WLS process is entirely consistent with the structure and intent of Training Packages and of the competency-based assessment process.

The model is enterprise-based. Its essential feature, the enterprise-based trainer/assessor (EBAT), a literacy practitioner with Assessment & Workplace Training qualifications and experience, is selected for his or her best fit with the particular enterprise in the project. The extent to which an assessor is grounded in the culture of the enterprise has been recognised as a hallmark of good assessment practice (Wyse and Brewer, 2001).

The WLS process is one of collaboration and teamwork with the enterprise. The EBAT and his or her enterprise-based partners form an assessment team. The team composition maximises site expertise. The team then has the shared responsibility for designing and developing assessment and training activities to deal with the intermingled technical and communication issues pervading the units of competence in the training package.

Members of the team read and analyse the assessment guidelines and competency standards in the Training Package. They also study existing policies and procedures sourced from workplace documentation. They then identify the enabling and underpinning language, literacy and numeracy demands made of workers and the levels of these skills required. The team spends time with individual workers, observing the tasks and duties they perform as part of their job, and further identifying the language, literacy and numeracy issues of the workplace.

The team considers these key questions:

1. Do the tasks performed by workers align with the elements and performance criteria described in the competency standards?
2. Is it possible to gather enough evidence to demonstrate competence?
3. What evidence would need to be collected, how and by whom?

In the final stage of this pre-assessment phase, the EBAT interviews each employee as part of the Recognised Current Competency (RCC) process. The interview includes:

1. Taking the assessee through the standards and explaining how they apply in the workplace.
2. Providing opportunity for a preliminary self-assessment.
3. Identifying learning support needs.
4. Identifying assessment options/evidence sources.

Through this process, the EBAT develops an individual assessment/training plan in collaboration with the assessee.

In the project's second phase RCC assessments are conducted. The assessment team, working in collaboration with the assessee, begins the process of collecting multiple sources of evidence to support competency against the relevant standards. This evidence typically consists of:

- Workplace observations
- Oral questioning
- Work samples
- Witness testimonials
- Workplace documentation.

Where language, literacy and numeracy skill gaps are identified, these are addressed in the context in which they appear, as on-the-job learning. The learning activities developed to achieve this skill development are planned to have direct relevance to actual workplace activity, or other training and/or strategic workplace developments.

In the final phase of the project, reports are written and assessment and training records are processed to meet reporting requirements. Qualifications are issued according to assessment outcomes.

The model in practice

The next step was to trial a case study of actual practice against the principles of the WLS model. The case study selected was a WELL project where an EBAT from WLS worked with a Training Officer from Statewide Independent Wholesalers to form an assessment team from the grocery and general merchandise Distribution Centre.

The initial phase proceeded with the team developing a checklist while observing individual workers doing their jobs. The team considered the WLS model's key questions regarding National Standards and evidence. A customised assessment tool was developed to be used in the warehouse to assess Units of Competence from Certificate I and II in the Transport and Distribution (Warehousing) Training Package, without taking the assessee off the job for lengthy periods.

Information meetings were then held, seeking expressions of interest from employees interested in participating. There was a good response. Each interested employee was interviewed to explain the standards and discuss the units being assessed for the person, work out an individual assessment plan, and identify learning support needs. A translation map was developed, relating the units of competence to the National Reporting System (NRS), by analysing each unit for Level of Competence and Aspect of Communication, then matching each employee on to a table.

Assessment and gap training then occurred. The report of the project gives just one example of a skill gap identified — an employee with a difficulty calculating averages was given lessons on the job.

Allen was able to understand the 'math' of the calculation after doing a couple of worksheets and discussing the problem with the trainer. He was then able to perform the calculation related to his job very quickly. The 'math' was contextualised into a workplace activity with which he was very familiar (Mitchell, 1999).

The employee was then 'reassess[ed] as competent' (Mitchell, 2001).

Another example of language, literacy and numeracy support dealt with problems with the Accident and Injury Report Form (Mitchell 2001). Many employees had difficulty with the form. It was decided that the form had design faults and it was redesigned.

Employees' outcomes were then tallied on to an NRS master table. The WELL report was written up. Qualifications were issued according to assessment outcomes.

The Statewide Independent Wholesalers project was faithful to the WLS model. The EBAT was well grounded in the workplace culture, and was able to set up effective collaboration networks within the enterprise.

As an integral, on-site trainer [the EBAT] is in an ideal position to provide assistance ... [which] ... directly helps the employee and gives clear outcomes to management who may not see the value of prolonged training courses (Mitchell, 1999).

The focus of the Statewide project was on assessment. Little information is provided about gap training.

Understandings of literacy and numeracy in the WLS model

The generic language of Training Packages, competencies and standards has to be made meaningful in each particular industry or workplace context. The WLS model allows for this process. But each workplace has its own multiliteracies, and gap training does not allow the WLS model to address these.

The following table, an adaptation of the ‘four resource roles of the literate person’ (Freebody and Luke, 1990), provides an evaluative framework in which the data from this study can be matched along the two axes of Media of Communication and Roles of the Literate.

Roles of the Literate	Communication media	
	Oral	Print
Code Breaker	The WLS model addresses the worker’s role as code breaker in the immediate context of the workplace and the assessment process. It engages him/her with the technology of the written symbols of language associated with standards and his/her performance of work tasks. The model allows the worker to express his/her understanding of the relationship between spoken and written symbols of language.	The model addresses the worker’s role as code breaker in the immediate context of the workplace and the assessment process. It engages him/her with the written symbols of language in Training Package standards, and also with those in text materials which are involved with work tasks.
Meaning Maker	The model addresses the worker’s role as meaning maker within the immediate context of workplace and assessment process. It allows him/her to match up his/her own knowledge of the workplace with a knowledge of textual structures involved.	Within the immediate context of workplace and assessment process, the model allows for the worker to bring his/her technology of code-breaking to the different structures of the various types of texts encountered, and the experiences portrayed in those texts.
Text User	The model addresses the worker’s role as text user, within the immediate context of workplace and assessment process. He/She must engage with relevant texts, in order to discuss standards, work tasks, and his/her assessment process.	The model allows the worker to assume the role of using texts, but only in the immediate context of his/her own job tasks and performance.
Text Analyst	This ‘critical literacy’ role is not specifically addressed by the model. It is not clear from the example of the Accident and Injury Report Form (Mitchell 2001), if workers had any input into a critical evaluation of the form, or its redesigning.	The model does not specifically address this role.

(after Freebody and Luke, 1990)

The WLS model is constructed within a focus on targets and outcomes in work performance: ‘Participants access gap training to meet identified learning needs. Further assessment and re-assessment opportunities are provided until competency [is] demonstrated’ (Crothers 2001). Literacy and numeracy here are located within a human capital model, allowing individual needs to be addressed in terms of basic skills deficits within the narrow context of the job task and the assessment process. The model responds to the perceptions of workplaces, which have industry core values relating to productivity and cost-effectiveness.

When the model is tested against a holistic goal, represented by the adaptation of the Freebody and Luke ‘roles of the literate person, it is clear that, while assessment objectives are being achieved, workers’ broader literacy and numeracy needs are not being addressed.

Conclusion

Delivery of integrated literacy and numeracy in Training Packages is geared to the needs of industry and workplaces. Measured against the holistic goal of addressing the needs of the

worker as a 'literate person', the objectives of those who teach literacy and numeracy in an assessment setting are necessarily limited to gap training for the immediate context. This leaves for further investigation the question of how workplace 'built in' literacy and numeracy programs can cater to literacy and numeracy 'gaps' that fall outside the basic skills of reading and writing.

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