DEVELOPING A NATIONAL STRATEGY FOR TRAINING IN THE PRINTING MACHINING SECTOR OF THE PRINTING INDUSTRY

JENNIFER GIBB
HUGH GUTHRIE
GRANT HOFMEYER

Adelaide
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Report on workshops held in Sydney, Melbourne and Hobart by the TAFE National Centre for Research and Development on behalf of the National Printing Industry Training Council (NPITC)

JENNIFER GIBB
HUGH GUTHRIE
GRANT HOFMEYER

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Recommendations

Major recommendations that emerged from the workshops are:

1. The printing industry should move quickly to develop competency standards for printing machining so that the national curriculum and on- and off-the-job training materials can be evaluated and up-graded to deliver the competency standards.

2. NPITC should give serious consideration to the suggestion that it be the organisation responsible for initiating and maintaining contact between on- and off-the-job training.

3. NPITC should ensure that if a printing machining specific train-the-trainer program is developed and run, this is made available nationally to all State/Territory branches of the NPITC and all TAFE schools of printing and graphic arts.

4. The printing industry should give serious consideration to the suggestion that it seek professional marketing advice when developing a strategy to market to the industry the benefits of structured on-the-job training.

5. The industry should investigate ways to provide the on-the-job assessment with credibility. This may be achieved by the development and promotion of a logbook/record of competencies, and/or through appropriate assessor training and other processes.

6. NPITC should write to DEET or the appropriate government department stating that the printing industry has a commitment to training but this commitment needs to be supported by legislation in order to ensure that the goodwill that exists is converted to action.

7. NPITC should be responsible for following up on each of the strategies listed in Tables 1-3 to ensure they are achieved. Further, NPITC should be responsible for ensuring that the draft work that was started at the NSW workshop is finalised and set in motion.
1. Introduction

In 1989 the National Printing Industry Training Council (NPITC) funded the TAFE National Centre for Research and Development to develop training materials to support the on-the-job component of the National Curriculum in printing machining.

To date three guides for trainers and two apprentice workbooks have been published. Others are currently being developed.

The NPITC decided that these training materials need to be introduced and explained to industry. The NPITC therefore commissioned the TAFE National Centre to hold workshops in Sydney, Melbourne, Hobart, Adelaide and Perth.

The purpose of these workshops was to discuss with participants how best to introduce these training materials to industry trainers.

The purpose of this report is to:

- describe the processes used in the workshops;
- outline the outcomes of the workshops held so far; and
- make a series of recommendations to the National Executive Director of the NPITC on potential implementation strategies and activities.

This report remains an interim document which will be revised once the planned program of workshops has been completed.
2. The workshop program

Three workshops have been held as follows:

<table>
<thead>
<tr>
<th>City</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>4-5 December, 1991</td>
</tr>
<tr>
<td>Melbourne</td>
<td>12-13 February, 1992</td>
</tr>
<tr>
<td>Hobart</td>
<td>14 February, 1992</td>
</tr>
</tbody>
</table>

Further workshops are proposed for South Australia and Western Australia. These should be completed by the end of April (assuming funds are available).

The aims of the workshops were to:

- familiarise participants with on-the-job training material;
- identify problems/issues associated with developing a training culture in the printing industry; and
- develop a strategy to market/implement the on-the-job training material and promote integration of training provided on- and off-the-job.

2.1 The participants

The participants were drawn from three major areas:

- **NPITC** — national and State/Territory executive directors (ACT, NSW, Qld, SA, Tas, Vic)
- **TAFE** — staff from schools of printing and graphic arts (ACT, NSW, Qld, Tas and Vic)
- **Industry** — representatives from PATEFA, PKIU and individual employers

Invited participants for each workshop are listed in Appendix 1.

2.2 The program

The workshop program included:

- introductory comments by NPTIC
- presentation on CBT and its implications for the printing industry
- explanation of the content and structure of the training material developed by the TAFE National Centre for industry trainers
- discussion of:
  - strategies to introduce the training material to industry
  - strategies to promote integration of on- and off-the-job training

In Sydney discussion of strategies focussed on how to promote a culture of training within the industry.
In Melbourne discussion focussed on how to give teeth to the assessment system and how to introduce competency-based training (CBT) to the industry.

In Hobart discussion focussed on how to promote the marketing of the on-the-job training material.

2.3 **The resources distributed**

So far, the following training material has been completed by the TAFE National Centre on behalf of the NPITC:

- *Guide for trainers — orientation*
- *Guide for trainers — safety*
- *Apprentice workbook — orientation*
- *Apprentice workbook — safety*
- *Guide for trainers — sheet-fed offset litho; single unit*

Copies of these were distributed to all workshop participants.

In addition, a number of pamphlets were handed out to workshop participants to help them to become familiar with the material. These included:

- **a brief summary of the Guide for trainers** which can be used by those personnel who are introducing the guide to new trainers. It is a memory aid and lists all the features of the guide that need to be explained to prospective users (see Appendix 2);

- **a brief pamphlet for prospective trainers listing the main principles of how to ensure that learning is promoted and encouraged.** This information is the bare minimum a trainer needs to know and is intended as a guide for trainers who have no experience in training and who have not attended a train-the-trainer course (Appendix 3); and

- **a summary for the on-the-job trainer of the practical and theory tasks the apprentice is expected to complete off-the-job for modules (1) and (2) of sheet-fed offset litho.** This information is important for the on-the-job trainer so that he/she has at hand a list of tasks the apprentice is doing at TAFE and can then, wherever possible, reinforce the off-the-job learning by giving the apprentice the opportunity to apply skills and knowledge acquired off-the-job to a real workplace situation (Appendices 4 and 5).

Additional resources distributed at the Melbourne and/or Hobart workshops included:

- **a list of issues related to the assessment of competency** (Appendix 6) and which was used as a basis for small group discussions in Melbourne; and

- **a summary of a study conducted by the Scottish Vocational Education Council (SCOTVEC) on college–employer partnerships which describes a range of possible modes of operation to enhance college–industry co-operation.** This is of particular relevance given the introduction of an integrated and competency-based approach to both on- and off-the-job training in the printing machining trade. This paper is reproduced in Appendix 7.

A range of video packages, reports and other resources were on display both in Melbourne and Hobart.
3. The implications of CBT for the printing industry

This chapter briefly describes the explanation of CBT presented at all three workshops. It was within the framework of this definition of CBT that participants discussed strategies to improve commitment to training in printing machining.

3.1 Setting the scene

The project started in 1988 with a conference to identify skills, knowledge and attributes required of printing machinists. This was the source data for the development of the national curriculum and for the development of training materials for TAFE and industry trainers.

Since the project began, the government has instigated major changes to the way work is organised through award restructuring and to the vocational education and training system through the introduction of a competency-based approach to training and assessment.

Put simply, the political and economic argument for reforming training and introducing CBT is that Australian industry needs to increase productivity and international competitiveness. In order to achieve these twin goals that in themselves will mark economic recovery, the government has embarked upon a series of micro-economic reforms. In these micro-economic reforms are award restructuring and the structural efficiency principle, which involve reform in the way work is organised and conducted. This workplace reform assumes a vocational education and training system that delivers quality outcomes—in other words a new approach to training which is embodied in the words competency-based training.

3.2 Definition of competency and competency standards

CBT is underpinned by competency standards. These standards provide the benchmark for:

- curriculum
- delivery of training
- assessment of training
- certification of competence
- recognition of skills

Competency is defined by the National Training Board (NTB) as the ability to perform the activities within an occupation or function to the standard expected in employment. Thus competency is:

The specification of knowledge and skill and the application of that knowledge/skill to the standard of performance required in employment.

(NTB Network No. 1, June 1991 p.3)

The primary emphasis in CBT is on what a person can do as a result of training—in other words the primary emphasis is on outcomes.
These outcomes are based on industry-specific standards and are achieved by instruction aimed at a learner achieving competency in precisely defined skills and knowledge:

- to specified standards of performance; and
- under specified conditions.

The effectiveness of this instruction is then assessed in the workplace and off-the-job and certification is based on this assessment of competence.

Thus CBT can be summarised visually by a diagram of a tripod: each leg of the tripod representing:

- competency standards
- training to these standards
- assessment to these standards (see diagram 1)

Diagram 1: How CBT relates to international competitiveness

INTERNATIONAL COMPETITIVENESS

↑

INCREASED PRODUCTIVITY

↑

FLEXIBLE MULTI-SKILLED WORKFORCE

↑

MICRO-ECONOMIC REFORM MEASURES:

- TARIFF REDUCTION
- AGRICULTURAL ASSISTANCE
- SEP & AWARD RESTRUCTURING
- PROMOTE INVESTMENT
- ETC
- ETC

↑

TRAINING

COMPETENCY STANDARDS

ASSESSMENT

* Structural efficiency principle

This tripod is the foundation of the vocational education and training system which is at the heart of workplace reform. Workplace reform is one of the micro-
economic reform measures that concentrate on achieving increased productivity and international competitiveness.

The crucial and indeed central role of competency standards in a CBT system is succinctly stated in a COSTAC document (1990):

> General consensus has emerged that a CBT system would provide the most desirable framework for the reform of the training system, given its emphasis on training outcomes related to industry and economic needs. Such a system requires that training have defined standards of competency and be undertaken and certified against these standards.

(COSTAC, 1990)

3.3 Role of Industry

Industry has a crucial role in all three components of a CBT system:

- setting competency standards
- delivering training
- assessing training

To quote from the CAI document *Proposals for the Australian Vocational Education and Training System*:

> It is accepted that industry must play the central role in setting the competency standards and curricula, and in establishing the requirements that must be met to ensure practical, high quality outcomes from the system.

> Equally important is the recognition that employers must ensure consistent, high quality training is provided in the workplace.

(CAI, 1991 p:36)
Thus the CBT system can be summarised in a flow chart as follows:

National competency standards

Accredited course with on- and off-the-job curriculum

INTEGRATED

Delivery in college of other provider

Delivery in workplace

Delivery in workplace, other provider or in combination

Assessment of competency to standard expected in job

Certification. Recording of competencies achieved

Appendix 8 lists all the principles of a CBT system as listed in the COSTAC (1990) document on CBT. These principles were distributed at the workshops.

Appendix 9 contains all the overhead transparencies used in the introductory explanation of CBT and the implications of CBT for the printing industry.
3.4 Implications of CBT for printing machining

The implications of a CBT system for printing machining is that there is a need to:
- develop competency standards;
- provide training in workplace and elsewhere where appropriate to achieve competency standards;
- develop methods of assessing competence acquired in the workplace;
- develop means to record competencies; and
- train workers to conduct training, assess training, and assess/recognise prior learning.

The aims of the workshops were to focus on one component of CBT in particular: the delivery of training in the workplace and in TAFE, and how these two can be integrated.

The means to ensure that training is integrated in a CBT system is through competency standards.

National competency standards play a crucial role in providing necessary linkage for integrating and articulating all types of training.

(Recognition of training, VEETAC, August 1991).

Competency standards have not yet been developed for printing machining; however, there is at least a national curriculum. The NPITC has chosen to focus on delivery of that curriculum and to take steps to ensure delivery is integrated.

It should be noted that once competency standards are developed, the curriculum will need to be reviewed to ensure it delivers the standards.

**Recommendation 1**

The printing industry should move quickly to develop competency standards for printing machining so that the national curriculum and on- and off-the-job training materials can be evaluated and up-graded to deliver the competency standards.
4. WORKSHOP OUTCOMES

This section describes the extent to which the proposed workshop outcomes were achieved:

- introduction to the Guide for trainers (sheet-fed offset litho)
- introduction of issues associated with developing a training culture
- introduction of strategies to market/implement on-the-job training materials and to promote the integration of training provided on- and off-the-job

4.1 Introduction to the Guide for trainers (sheet-fed offset lithography)

The Guide for trainers is written for printers who are responsible for providing on-the-job training to apprentices and other workers in the use of sheet-fed offset litho presses.

The guide is a resource for trainers and aims to give them as much help as possible when they are designing training sessions. It covers all aspects of preparing, operating, cleaning, maintaining the press and maintaining safety in the workplace.

It provides:
- comprehensive checklists
- suggested activities
- sample questions and answers
- assessment guidelines

However it does not provide lesson plans. It provides the trainer with:
- the framework and content to be covered during training
- guidelines for the assessment of that training

The pamphlets in Appendices 2–5 of this document were distributed to workshop participants during the presentation and discussion of the Guide for trainers. It was recommended that these four pamphlets be given to all industry trainers when they are being familiarised with the guide and shown how best to use it.

4.2 Problems and issues associated with developing a training culture in the printing industry

Workshop participants agreed that the following are issues that the industry needs to consider when developing a training culture for the industry, bearing in mind all the changes taking place as a result of award restructuring and the introduction of CBT.

TAFE TRAINING

- Many in industry and TAFE have little or no understanding of the competency-based approach to training.
- There are different levels of equipment/technology between TAFE and the workplace (and between workplaces) and therefore apprentices may not be able to fully achieve the requirements of the curriculum/competency standards.
TAFE may end up teaching only basic skills.

TAFE is viewed by many people in the industry as the accepted trainer.

There is little or no existing means for regular communication between the TAFE and workplace trainers.

INDUSTRY TRAINING

- Many employers have the view that training is necessary but interferes with production.
- Smaller companies need to become more interested/committed to training and to develop an in-house training culture.
- Apprentice/trainee is immediately expected to be a productive unit.
- There is a general lack of responsibility by the industry for training.
- Level of knowledge of the trainer varies greatly between companies.
- Trained staff may be poached by other employers not committed to training.
- There is no consistency of training in industry due to the diversity of size/skills/attitudes within enterprises in the printing industry.
- There is a lack of on-the-job training skills in industry.
- There is a need to develop a culture to integrate on- and off-the-job training.
- At present there is little or no role for on-the-job assessment.

The Sydney workshop focussed its attention on how to develop strategies to ensure industry played an active role in providing on-the-job training.

The Melbourne workshop focussed its attention on the issues of introducing CBT to the industry and how to strengthen the assessment process.

4.3 Outcomes of the workshops: Implementation strategies

Workshop participants spent considerable time developing a range of implementation strategies for the on-the-job resources. These are summarised in Table 1 under the following headings:

- Strategy
- Organisation responsible for carrying out the strategy
- Workshop participant who is the point-of-contact of that organisation
- Time frame
- Action required to achieve the strategy

Some participants expressed concern about the effectiveness of trying to implement a partially developed series of training materials and processes. All, however, agreed that there needed to be an operational plan to implement the completed on-and off-the-job resources. In addition this would require associated administrative processes and, if appropriate, funding.
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Which organisation is responsible</th>
<th>Workshop contact</th>
<th>Time frame</th>
<th>Action to be taken to achieve strategy</th>
<th>Workshop activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NPITC State basis</td>
<td></td>
<td>6-12 months</td>
<td>• NPITC to discuss at National Strategic Planning</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>NPITC national</td>
<td>J. Jarvis</td>
<td>Feb 1992</td>
<td>• Prepare press release</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>PATEFA national and State executives</td>
<td>PATEFA reps</td>
<td>Feb 1992</td>
<td>• Article and letter to each group</td>
<td>Letter to employers</td>
</tr>
<tr>
<td>4.</td>
<td>NPITC</td>
<td>Denis Bingham</td>
<td>Feb 1992</td>
<td>• Articles in State and national NPITC newsletters</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>NPITC</td>
<td>Alan Wetherall</td>
<td>Feb 1992</td>
<td>• Letter to employers</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>NPITC</td>
<td>Frank Rew</td>
<td>Early 1992</td>
<td>• Request discussion of on-the-job training strategy by key players</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>NPITC</td>
<td>John Jarvis</td>
<td>Early 1992</td>
<td>• Letter and program for workshops</td>
<td>Program (4½ day)</td>
</tr>
<tr>
<td>8.</td>
<td>NPITC</td>
<td>Alan Wetherall</td>
<td>March 1992</td>
<td>• Letter and plan for session</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>NPITC</td>
<td>Geoff Russell</td>
<td>Feb 1992</td>
<td>• Develop minimum 3-day trainer-training program</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>NPITC</td>
<td>Geoff Russell</td>
<td>Feb 1992</td>
<td>• Seek OK from DEET</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>NPITC</td>
<td>Graeme Barnes</td>
<td>March 1992</td>
<td>• Both national projects to develop log book and seek comment from TAFE and industry</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>NPITC</td>
<td>Graeme Barnes</td>
<td>On-going</td>
<td>• Both national projects to develop log book and seek comment from TAFE and industry</td>
<td></td>
</tr>
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<td>13.</td>
<td>NPITC</td>
<td>Hugh Guthrie</td>
<td>Late 1992</td>
<td>• Both national projects to develop log book and seek comment from TAFE and industry</td>
<td></td>
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</tbody>
</table>
At the Sydney workshop, five groups were formed to do some preparatory work that would contribute towards achieving a number of the strategies. This work included:

- preparing a draft of the letter to be sent to employer/employee groups (Strategy No. 3);
- drawing up a plan for short orientation workshops to be run by NPITC and TAFE for regional locations (Strategy No. 8);
- drawing up a plan for a short (½ day) orientation session for employers of Stage 1 apprentices (Strategy No. 10);
- designing a 3-day train-the-trainer program for printing-machining trainers (Strategy No. 12).

The fifth group decided to look again at the list of issues for which there are no fully developed strategies.

The preparatory work undertaken by these five working groups is summarised below.

4.3.1 National release (media release and letter) to employer/employee groups (Strategy No. 3)

The workshop participants agreed that:

- media releases signed by both PATEFA and PKIU directors should be prepared and published;
- two types of letter should be sent to employers:
  - one for companies who would benefit from training material currently available
  - one for companies who will benefit from training material still being developed
- a modified version of the letters should be prepared and hand-delivered to apprentices by the college teacher. This letter will tell the apprentices to see their supervisors and the letter to management will also refer to the fact that apprentices have received a similar letter.

It was decided that the letter to employers should:

- have impact, concept and content;
- be written under TAFE and NPITC logos;
- be addressed to chief executive and production manager;
- include some reference to role and responsibilities of NPITC; and
- include an order form and advance brochure for the training material.

Workshop participants prepared a draft first page of the letter to management (see Appendix 10).
It was agreed that since John Jarvis had recently prepared a media release there was no point in preparing another at this point.

4.3.2 Short orientation workshops for employers (especially those in regional locations) run by NPITC and/or TAFE (Strategy No. 8)

The aim of these workshops would be to educate employers to the changing training environment.

This aim will be achieved by:

- contacting employers frequently, for example using short 'snappy' letters, brochures, questionnaires;
- marketing the training package at short workshops; and
- individual industry visits.

The content of the orientation workshops should include the following topics:

- the value of investing in people;
- the increased need for training workers;
- an introduction to the training material and its value for staff training in general and apprentice training in particular;
- information about the changing training arrangements and relevant legislation; and
- explanation of on- and off-the-job curriculum.

These orientation workshops should have the following features:

- casual style;
- aim of giving an introductory overview;
- high level of practicality and relevance to industry needs — there should be no bureaucrats or government speakers;
- clear explanation and demonstration of how the apprentice receives college training and how he/she is assessed, how the Guide for trainers contributes to the apprentice's training program; and
- practical demonstration of the training material.

Ideally the workshops should be held after business hours and should be no longer than 2–2½ hours.

The participants agreed that orientation workshops in themselves were not enough and that in addition the following follow-up actions be taken:

- give employers the name of a contact/support person;
- offer/provide information on train-the-trainer programs for printing machinists;
- re-visit employers who take on apprentices and maintain on-going liaison; and
- get feedback from apprentices.

4.3.3 Short (½ day) orientation session for employers of Stage (1) apprentices (Strategy No. 10)

The workshop participants agreed that:

- apprentices, parents and employers of Stage 1 apprentices should be invited to this session. It was felt that there would be a greater sense of commitment to training if employers and trainers attended;
- the session should be informal and last a maximum of 2-3 hours;
- the session should be structured as follows:
  - formal presentation 30-40 minutes
  - question session during tea/coffee break
  - introduction to packages
- the session should be held at major regional centres or schools, e.g. St Georges, Campbelltown, Parramatta West;
- a separate package may need to be developed for country students;
- the content of the session should cover:
  - overview of on- and off-the-job training curricula
  - value of recording progress in log book
  - benefits of standards across industry in ensuring uniformity
- a second follow-up meeting should be held during the year to check progress; and
- follow-up phone calls to gain commitment should be made to employers through NPITC.

Note: The issue of who should be responsible for initiating and maintaining contact between TAFE and industry trainers/employers was unresolved.

There was a suggestion that in the short-term (i.e. this year) TAFE be responsible but that NPITC should look into accepting this responsibility.

Recommendation 2

NPITC should give serious consideration to the suggestion that it be the organisation responsible for initiating and maintaining contact between on- and off-the-job training.
4.3.4 Printing-machining specific train-the-trainer program (Strategy No. 12)

Workshop participants drew up the content for a 3 x 7 hour training program for printing machinists who have responsibility for training apprentices.

The Guide for trainers (sheet-fed offset litho) would be used throughout the program which would be run by TAFE on a fee-for-service basis.

The target for this program would be medium to large companies that employ printing machining apprentices.

The content of the program would include:

- how and why adults learn
- explanation of the Guide for trainers (sheet-fed offset litho)
- explanation of how this material can be used in the workplace
- links and comparison with TAFE syllabus
- how to construct training objectives
- action learning plans
- presentation skills
- how to do one-to-one demonstrations
- how to construct a structured training plan
- explanation of training guarantee requirements
- audio-visual materials

Further development work on this program will be undertaken by Alan Weatherell in NSW and Geoff Russell in Queensland.

The key problem to be overcome is how to convince the printing industry that training is important and worth spending time, effort and money on. Participants agreed that it was important to:

- work through associations like the litho associations, AFTA and LAATMA;
- monitor and study information from companies that have measured the benefits of training in terms of productivity improvement and waste reduction; and
- target the right person in the company.

The Melbourne and Hobart workshops participants endorsed the idea of developing and running a trade-specific trainer training course.

Additional points raised by the Melbourne workshop were:

- integrate trainer training into the award and to TAFE certificate level;
- offer industry the capacity to train trainers;
- ensure that the trade-specific trainer training course takes account of the competency standards for workplace trainers, soon to be endorsed by the National Training Board (NTB);
- develop an accreditation process for trainers.
With reference to the actual delivery of the course it was suggested:

- the course be run on week-ends or evenings;
- the sessions should not be 3 days solid but should be spread over a longer period to enable trainee trainers to practice what they learn in the work place;
- criteria for trainers be identified to help employers select suitable candidates for trainer training.

Recommendation 3
NPITC should ensure that if a printing-machining specific train-the-trainer program is developed and run, this be made available nationally to all State/Territory branches of the NPITC and all TAFE schools of printing and graphic arts.

4.3.5 How to overcome general apathy to training

The main unresolved issue identified by workshop participants was the general apathy towards training in smaller companies, mostly due to production pressures.

In order to deal with this apathy and overcome the resistance to training it was recommended that the printing industry develop a marketing strategy. This marketing strategy should have the following features:

- It should promote training success stories in order to sell the benefits of training. (This point was also suggested by the Melbourne workshop.)
- Different marketing strategies should be developed for different-sized companies in the industry to demonstrate how advantageous the guides are.
- It should promote materials by making reference to:
  - safety legislation requirements
  - quality assurance programs and accreditation
  - philosophy of competency-based training and the government's commitment to the structural efficiency principle
  - eligibility under training guarantee levy

Recommendation 4
The printing industry should give serious consideration to the suggestion that it seek professional marketing advice when developing a strategy to market to the industry the benefits of structured on-the-job training.
4.4 Workshop outcomes: assessment and Introducing CBT

The twelve implementation strategies (see Table 1) suggested by the Sydney and Melbourne workshops all relate to how to market the training material to the industry in general and employers in particular and the role in achieving this outcome to be played by:

- TAFE
- NPITC
- employee and employer organisations

The Melbourne workshop also put forward strategies to deal with the following issues:

- How to assess performance and record the results of that assessment on-the-job (see Table 2).
- How to communicate the CBT concept to industry (see Table 3).

4.4.1 On-the-job assessment

Table 2 lists the suggested action to be taken to develop, implement and review on-the-job assessment. Workshop participants saw the need for more work to be done in defining the nature of the on-the-job assessment, including its relationship to the assessment occurring off-the-job. In addition they were concerned with the lack of faith in both on-the-job training and its associated assessment processes and recommended the need for:

- an examination of the proposed (Victorian) contract of training which imposes real obligations on its participants to undertake and promote training; and
- a review process for the on-the-job assessment component which examines the extent to which it has been successfully implemented at the trial and/or later stages.
TABLE 2: ON-THE-JOB ASSESSMENT

<table>
<thead>
<tr>
<th>Strategy (What)</th>
<th>Responsibility (Who)</th>
<th>Time-frame (When)</th>
<th>Action to be taken to achieve strategy (How)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop and implement on-the-job assessment process</td>
<td>Industrial parties UPITB — State Training Authority</td>
<td>On-going — in parallel with progress on trainer training</td>
<td>Standards to be established between industry and TAFE. Establish parallels where possible between ‘college standards’ and ‘workplace standards’. Should be complementary for training purposes. Increase dialogue between college/employer - at end of each block? - appoint and work through college liaison person.</td>
</tr>
<tr>
<td>Review assessment process</td>
<td>Industrial parties, college, VPITB</td>
<td>Jan 1993</td>
<td>Form panel. Examine process through recall of records of competency. Refinement of process as a result of review.</td>
</tr>
<tr>
<td>Develop log book (register of competencies)</td>
<td>National projects</td>
<td>Late 1992</td>
<td></td>
</tr>
</tbody>
</table>

Recommendation 5

The industry should investigate ways to provide assessment on-the-job with credibility. This may be achieved by the development and promotion of a log book/record of competencies and/or through appropriate assessor training and other processes.

4.4.2 How to communicate the CBT concept to industry

Table 3 lists the action that the workshop participants believe should be taken in order to gain a total commitment from the industrial parties and state training authority on communicating CBT concept to industry.

Workshop participants noted that workplaces employing less than five people needed and indeed merited special attention when marketing the concept of CBT to them.

With reference to the suggestion that a promotional video be produced, it was noted that other videos and resources already available could be used or adapted to meet the needs of the printing industry.
TABLE 3: COMMUNICATING CBT CONCEPT TO INDUSTRY

<table>
<thead>
<tr>
<th>Strategy (What)</th>
<th>Responsibility (Who)</th>
<th>Time-frame (When)</th>
<th>Action to be taken to achieve strategy (How)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicate CBT concept to industry</td>
<td>Industrial parties and State Training Authority</td>
<td>May 1992</td>
<td>- letter stating intent of program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- media releases</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- promotional video</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- metro and regional information workshops</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- form liaison group to develop and plan information workshops</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- pack and deliver material</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- orientation session for employers and apprentices either in college or in workplace</td>
</tr>
</tbody>
</table>

4.5 Miscellaneous points raised for discussion at the workshops

The following additional points were raised by participants during the workshops:

- The industry should lobby PATEFA to encourage employers to release trainers so that they have time for training.

- PATEFA in NSW supports the view that the training guarantee levy apply to all businesses not just those with an annual payroll of $200,000.

- The requirement for training could be included in quality assurance certification and/or in company corporate strategy.

- Supplier training could be a vehicle for promoting the training material.

- A companion volume of sample lesson plans would be a useful addition to the training material.

- In the past there was a concern in many parts of the industry for the welfare and training of apprentices. Now with production pressures this has fallen by the wayside.

- Organising meetings between parents, apprentice, employers and TAFE creates a bond that is important for the creation of a training ‘culture’ within an organisation.

Participants at the Sydney workshop agreed that the training guarantee levy had been a catalyst in getting a training culture started in the industry. The workshops were evidence that there exists much goodwill in the industry towards adopting a culture of training. What is needed is legislation to support and encourage this goodwill which in turn will be a catalyst to the establishment of training in much the same way that the training guarantee levy has been.
NPITC should write to DEET or the appropriate government department, stating that the printing industry has a commitment to training but that this commitment needs to be supported by legislation in order to ensure that the goodwill that exists is converted into action.
5. Conclusions

The three workshops run in Sydney, Melbourne and Hobart were attended by representatives of the printing industry in four States (NSW, Qld, Tas, Vic) and the ACT. The industry was represented by:

- NPITC
- employers and supplier representatives
- PATEFA
- PKIU
- TAFE colleges of printing and graphic arts.

The workshops achieved the outcomes intended:

- the training material available was introduced and explained to industry representatives and TAFE teachers;
- the need to create a culture of training in all sections of the industry was discussed in the light of national directives relating to competency-based training and the increased focus being given to the role of training provided in the workplace;
- strategies were suggested on how to ensure the training material is known to and used by industry. This in turn emphasized the need to:
  - market the benefits of training to employers, particularly small enterprises
  - promote integration between training provided in TAFE and training provided by industry

All the industrial parties have a role to play in ensuring that the strategies put forward are achieved. It is important that the momentum created by running these workshops is not lost but is in fact built upon, and that the industry (possibly through its national ITC) uses the outcomes of these workshops to develop a national strategy for training in the printing industry.

Recommendation 7

NPITC should be responsible for following up all the strategies listed in Tables 1-3 to ensure they are achieved. Further, NPITC should be responsible for ensuring that the preparatory work started at the NSW workshop is finalised and set in motion.
6. References

6.1 References cited


6.2 Other useful resources


NSW Dept of TAFE and Dept of Industrial Relations. (1990). Award restructuring: resource package for TAFE teachers. Sydney: NSW Dept of TAFE and Dept of Industrial Relations.


APPENDIX 1

Invited workshop participants
INVITED PARTICIPANTS

Sydney, Melbourne & Hobart Print Training Workshops

TAFE
School of Graphic Arts
Sydney Technical College

Alan Wetherall
Ray Carpenter
Dick Cooper
Rick Moore
Peter Crozier
Ian Walls
Russ Emery
Phil O'Brien
Graham Gould

School of Graphic Arts
Kangaroo Point Tech. College

David Munro
Geoff Russell

School of Graphic Arts
Hobart Technical College

Gordon Miller
Gilbert Bantoft
Peter Macmichael
John Mills
Suzanne Young

Melbourne College of Printing
& Graphics

Graham Barnes
Robert Black
Ian Cross
Bob Dunn
Rob James
Clive Heller
Brian Nuttman
Andrew Readman
Martin Haggerty

ACT Institute of TAFE

Lloyd McPherson

TAFE National Centre for Research
and Development

Jennifer Gibb (NSW)
Hugh Guthrie (Vic & Tas)

NPITC

Denis Bingham, Vic
Chris Todd, Tas
Trevor Davis, NSW
Rodger Klopp, Qld
Grant Hofmeyer, SA
John Jarvis, National Executive
Ray Hutt, ACT

PKIU

Frank Rew
Rod Moar
Nola James
Don Baron
PATEFA

Matthew Woodward
Graham Luke
Bill Matthes
Tom Simpson

Other Employers:

Greg Grace (supplier representative)
Keith Henderson
John Alcock (supplier representative)
Graeme Glanville
Jeff Haines
Robert Hadfield
Hans Jorst
Iain Kennedy
Syd Gilding
Ian Caldwell
David Hibberd
Rod Viney
Mike Cosgrove
Roy Bonken
Heinz Vojacek
Wayne Jeschke
Brian Woolveridge
John Pitt
Mike Hale
Kevin Kennedy
APPENDIX 2

Brief summary of *Guide for trainers*
CONTENTS OF GUIDE FOR TRAINERS

Sheet fed offset litho single unit

(This leaflet is an aid to the person who introduces the Guide for Trainers to workplace trainers. It lists the key features that need to be explained.)

A. INTRODUCTION

Notes to trainers on how to:
- plan training;
- deliver training;
- assess training;
- keep training records.

It is recommended that all workplace trainers undertake a train-the-trainer course.

B. MACHINE FEATURES

- Single sheet/stream feeder;
- Single unit printing;
- Standard dampening;
- Standard inking system;
- Standard delivery.

C. FOR MODULE 1

Range of printed products includes use of:
- Uncoated substrates (varying weight, caliper, texture);
- Coated substrates (if need arises);
- Single and multi colour work;
- Type, line, stipple and solid.
FOR MODULE 2

Range of printed products includes use of:
- uncoated and coated substrates (of varying weight, calliper, texture);
- multi colour work (up to four colour process);
- type, line, stipple, solid and duo-tone.

D. FOCUS OF THIS TRAINING MATERIAL

- maintain standards of workplace safety;
- produce commercially saleable product;
- carry out basic on-going maintenance.

E. ORGANISATION

The materials follow the printing process

Produce OK sheet
- make ready press
  - set up feeder
  - set up delivery
  - set up printing press

Run job
- monitor operation of press and check quality of product
  - end of run completion

F. CONTENT OF THIS GUIDE FOR TRAINERS

- notes for trainers
  - gives overview of each unit
- checklists
  - aid for trainer
  - aid for apprentice
  - assessment tool (process)
- short answer questions
  - check on underpinning knowledge
  - check that apprentice can apply knowledge to range of situations
  - assessment tool (knowledge)

Trainers may need to make alterations to checklists so that they accurately reflect workplace practice.

Trainers are also encouraged to add/modify questions as the need arises.

The questions presented in the guide are samples only.

G. ASSESSMENT GUIDELINES

- process assessment (includes maintenance tasks)
- performance assessment which includes:
  - standards of safety;
  - process;
  - specifications of job (job docket)
  - enterprise specific standards
    - production time
    - spoilage rates
    - quality

H. ASSESSMENT RECORDS

- log book
- job assessment sheets
- portfolio

Contents of guide for trainers
APPENDIX 3

How to promote and encourage learning
6. Feedback

Give the learners feedback on their performance as soon as possible. The more immediate the feedback, the greater the value.

Always be encouraging; positive prompt feedback is more likely to enhance learning.

7. Styles of learning

Remember that different learners learn in different ways, so take this into account when preparing a training session:
- some like to listen, watch and discuss;
- some like an overview of the whole before concentrating on parts;
- some like to use diagrams, graphics;
- some relate only to words;
- some like a little at a time - then the ‘whole’ becomes clear later.

As a trainer, remember to use a variety of methods when training and, if training in a one-to-one situation, use the training method to which your learner responds best and is most comfortable with.

8. Positive and encouraging learning environment

Learners should not be made to feel foolish or incompetent. The learning environment should not be threatening or intimidating. Learners should be made to feel they are equal partners in the learning process. It is important to foster the learner’s self-esteem and create an environment that promotes, nourishes and coaxes learning.

How to ensure that you promote and encourage learning

1. Take into account the learner’s previous experience
2. Motivate the learner
3. Ensure training reflects real life needs
4. Give plenty of opportunity for practical application
5. Encourage the learner to participate actively
6. Give feedback
7. Remember that different learners have different learning styles
8. Create a positive and encouraging training environment

Notes

1. Learner’s previous experience

The learner’s experience and existing knowledge is a rich resource to be taken advantage of.

Find out what the learner already knows about printing before starting training; find out what he/she has learnt at TAFE so that you can build
on that knowledge, reinforce it and extend it.

A learner’s existing knowledge is the basic building blocks of training.

2. Goals and motivation

Get to know the learner’s goals - make sure that both you and the learner are heading in the same direction.

Make sure the learner can see that you are there in order to help him/her achieve his/her goals.

A learner with a goal is more likely to be motivated.

3. Real life needs

Learners need to focus on real life needs. This need is easily satisfied in your training situation since the learner is learning how to become a printer in the workplace and is therefore surrounded by real life needs.

4. Practical application

Learners need to be given plenty of opportunity to apply their knowledge. Therefore give the learners every opportunity to use the knowledge they have acquired as soon as possible and as often as possible.

Find out what the learner has been learning off-the-job at TAFE and, whenever possible, give the learner the opportunity to apply that knowledge in the workplace.

5. Active participation

Learning is very much a two-way process; it is not just the transmittal of knowledge from the expert to the learner. The learner must feel free and, in fact, encouraged to ask questions. The learner is an active participant in the learning process; by asking questions, asking for clarification, the learner is telling you what he/she has understood and how well he/she has understood the topic.

The trainer, too, must ask questions, to find out how much has/has not been understood.

It is not enough to ask questions like:

'Is this clear?'
'Do you understand?'

Most learners will respond 'Yes'.

Instead, ask questions starting with:

'How . . . ?'
'What if . . . ?'
'Why . . . ?'

Above all, create an environment in which the learner feels comfortable about saying:

'I don’t understand'
'How do I . . . ?'
'What do you mean?'
APPENDIX 4

Practical and theory tasks: off-the-job (Module 1)
DAMPERS AND DAMPENING

Learning tasks:
- Describe and compare the difference in operation between a conventional and an integrated dampening system;
- Describe the fundamental role of 'water' in the lithographic process;
- Identify and explain the roles of the constituents of a fountain concentrate;
- Describe effective methods of measuring the acidity/alkalinity of a fountain solution;
- Describe the recommended/acceptable acidity/alkalinity for optimum print performance;
- Describe three common print problems related to acidity/alkalinity of fountain solution;
- Describe effective strategies for the elimination of the print problems in the previous task;
- Describe two different circumstances that could arise during print production that may alter the acidity/alkalinity of a fountain solution and result in print problems;
- Describe four common print problems associated with incorrect ink/water balance;
- Describe effective strategies for the elimination of each of the four print problems identified in the previous task;

INKING SYSTEMS

Learning tasks:
- Identify and draw schematic diagrams of three inking systems used in sheet fed offset lithography;
- Compare the performance of two of the three inking systems identified above;
- Identify and describe the role/function of all rollers in an inking system;
- Explain the term 'rolling power';
- Explain 'shore hardness' and its implications for roller performance;
- Describe the characteristics of rollers that facilitate efficient operation;
- List the operations carried out in roller manufacture;
- Describe the requirements of maintaining optimum roller condition;
- Identify and explain problems associated with incorrect roller setting; and
- Identify problems associated with poor roller condition.

---

**PERFORMANCE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Task</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dampers removed as detailed in manual/checklist</td>
<td>☐</td>
</tr>
<tr>
<td>Most appropriate dampers for recovering identified</td>
<td>☐</td>
</tr>
<tr>
<td>Old cover removed as detailed in manual/checklist</td>
<td>☐</td>
</tr>
<tr>
<td>All tools/equipment cleaned/replaced</td>
<td>☐</td>
</tr>
<tr>
<td>Roller prepared for covering as detailed in manual/checklist</td>
<td>☐</td>
</tr>
<tr>
<td>Roller covered as detailed in manual/checklist</td>
<td>☐</td>
</tr>
<tr>
<td>Dampers replaced and set as detailed in manual/checklist</td>
<td>☐</td>
</tr>
<tr>
<td>Critique identifies all irregularities detrimental to damper performance</td>
<td>☐</td>
</tr>
</tbody>
</table>

**TASK SPECIFICATIONS**

Given a single unit lithographic press, all necessary tools/materials, remove dampers from press, critique the condition of damper coverings to assessing lecturer. Identify the most appropriate damper requiring re-covering, remove old covering, detailed as checklist, recover damper as detailed in manual/checklist.

---

**CERTIFICATION**

**LECTURER**

I hereby certify that the student has successfully completed this assessment. Date: ___/___/___

---

I hereby certify that the student has been unsuccessful in completing this assessment. Date: ___/___/___
### Assessment 1.5: Work & Turn

In order to pass this assessment, you must successfully complete the given job by meeting all eight (8) performance specifications (relative to the OK sheet). Identify/Implement effective strategies for the elimination of any of the print problems listed in the performance specifications and ensure all procedures are carried out in accordance with the checklist. Four (4) major headings on back of this assessment sheet.

**MACHINE SPECIFICATIONS**
- Offset Lithographic, Single Unit, Single Sheet Feeder, Conventional Delivery, Conventional Inking, Conventional Dampening

**JOB SPECIFICATIONS**
- 200 sheets, Uncoated Stock, Single Colour, Line and Tone (Max 1334)
  - Work and Turn (Self-backing)

### PERFORMANCE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ink Film Variation (From OK sheet)</td>
<td>± .2</td>
</tr>
<tr>
<td>Register Variation</td>
<td>nil</td>
</tr>
<tr>
<td>Final damaged/blank sheets</td>
<td>± 0.3%</td>
</tr>
<tr>
<td>Reproduction</td>
<td>40% slippee + 22% dot gain</td>
</tr>
<tr>
<td>All Health &amp; Safety Standards met</td>
<td></td>
</tr>
</tbody>
</table>

**Effective strategies for elimination of any of the following print problems identified / implemented**

- Catch up
- Emulsionation
- Sooting
- Wash out
- Oddation
- Nickles

### INK AND INK ADDITIVES

**Learning tasks:**
- Describe the three basic constituents of a paste/litho ink.
- Describe the role/function of each constituent identified in the previous task.
- Describe the three basic drying methods of paste inks.
- Identify four ink additives commonly used in paste inks.
- Describe the reason for using the additives identified in the previous task.
- Describe the procedure/formula for mixing two of the additives identified in the previous task.
- Explain the distinct characteristic(s) and give a particular circumstance that would suit the use of seven of the following types of ink:

<table>
<thead>
<tr>
<th>Ink Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Ink</td>
</tr>
<tr>
<td>Metallic Ink</td>
</tr>
<tr>
<td>Opaque Ink</td>
</tr>
<tr>
<td>Transparent Ink</td>
</tr>
<tr>
<td>Matt Ink</td>
</tr>
<tr>
<td>Gloss Ink</td>
</tr>
<tr>
<td>Varnish Ink</td>
</tr>
<tr>
<td>Scuff resistant Ink</td>
</tr>
<tr>
<td>Stiff Ink</td>
</tr>
<tr>
<td>Odourless Ink</td>
</tr>
<tr>
<td>MICR ink</td>
</tr>
<tr>
<td>Light fast Ink</td>
</tr>
<tr>
<td>Short Ink</td>
</tr>
</tbody>
</table>

---

### CERTIFICATION

**LECTURE**

I hereby certify the student has successfully completed this assessment. Date: / /  

I hereby certify that the student has completed the above criteria documented in the comment section in order to successfully complete this assessment. Date: / /  

I hereby certify that the student has been unsuccessful in completing this assessment. Date: / /  

---

**SHEET FED OFFSET LITHOGRAPHY**

**Module 1 - single colour printing**

Off-the-job content (includes theory and practical tasks)

The apprentice completes four theory units as follows:
- ink and ink additives;
- dampers and dampening;
- inking systems;
- print problems 1.
Before I...
**PRINT PROBLEMS 1**

**Learning tasks:**

- Identify and describe the manifestation of the following print problems:
  - catch up
  - tinting
  - wash out
  - emulsification
  - mis-register
  - oxidation
  - hickies

- Describe common circumstances that could result in each of the above;
- Describe an effective strategy for the elimination of both of the print problems above;
- Obtain samples (facsimiles) of each of the print problems, label them appropriately and fix them to your assignment.

Whenever possible or practicable, please reinforce the off-the-job learning by giving the apprentice the opportunity to apply this knowledge.

In addition to the theory units, the apprentice is expected to complete five practical tasks off-the-job. These are:

1.1 single colour print;
1.2 ink mixing and matching;
1.3 lubrication/maintenance;
1.4 cover/set damper;
1.5 work and turn.

A description, including job/task and performance specifications is included in the following pages.
APPENDIX 5

Practical and theory tasks: off-the-job (Module 2)
SHEET FED OFFSET LITHOGRAPHY

Module 2 - multi colour printing

Off-the-job content (includes theory and practical tasks)

The apprentice completes two theory units as follows:

- print problems 2;
- blanket characteristics.

A description of the learning tasks in these two theory units is on the next page.

Whenever possible or practicable, please reinforce the off-the-job learning by giving the apprentice the opportunity to apply this knowledge.
PRINT PROBLEMS 2

Learning tasks:
- Identify and describe the manifestation of the following print problems:
  - unwanted image area;
  - irregularities in impression;
- Describe common circumstances that could result in each of the above;
- Describe an effective strategy for the elimination of each of the print problems identified in the previous task;
- Identify and describe the manifestation of the following print problems:
  - delayed ink drying;
  - picking;
- Describe common circumstances that could result in each of the above;
- Describe an effective strategy for the elimination of each of the print problems identified in the previous task.

BLANKET CHARACTERISTICS

Learning tasks:
- Describe three print problems associated with sheet fed offset lithographic blankets (mounting, condition and/or type);
In order to pass the assessment, you must successfully complete the given job by meeting all eight (8) performance specifications listed in the 'performance specifications' section. Identify/Implement effective strategies for the elimination of any of the print problems listed in the performance specifications and ensure all procedures are carried out in accordance with the checklist - four (4) major headings on back of this assessment sheet. If any of the criteria is not met, you will not pass this assessment.

Before completing the assessment you must:
- Read the document carefully and follow all of its instructions.
- Obtain all necessary materials, tools and equipment (including adequate waste sheets).
- Ensure that the printing machine is prepared for your assessment.
- Ensure you are familiar with all of the requirements necessary to complete this assessment.
- Consult your lecturer if you have any questions or concerns.

**MACHINE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Offset Lithography, Single Unit, Conventional Dampening</th>
<th>Single Sheet Feeder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam Feeder:</td>
<td></td>
</tr>
</tbody>
</table>

**JOB SPECIFICATIONS**

200 sheets, Coated stock, Minimum 2 Colour (1 Colour Ink/m), line and tone/half tone (100 - 180g)

**PERFORMANCE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Ink flow variation (from OK sheet): + - 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register variation:</td>
</tr>
<tr>
<td>Completed sheets: 125</td>
</tr>
<tr>
<td>Fin damage/blank sheet: ≤ 5%</td>
</tr>
<tr>
<td>Maximum machine life: 4.8 Hours</td>
</tr>
<tr>
<td>All Health &amp; Safety Standards met</td>
</tr>
</tbody>
</table>

Effective strategies for elimination of any of the following print problems identified/implemented:

- Catch up/wash out
- Emulsification
- Bleeding
- Unwished image
- Picking
- Unwished image
- Unwanted image
- Pickling

**CERTIFICATION**

LECTURER
I hereby certify the student has successfully completed this assessment. Date: / / 
I hereby certify that the student has completed the extra criteria documented in the 'comments' section in order to successfully complete this assessment. Date: / / 
I hereby certify that the student has not been successful in completing this assessment. Date: / / 

LECTURER
I hereby certify the student has successfully completed this assessment. Date: / / 
I hereby certify that the student has completed the extra criteria documented in the 'comments' section in order to successfully complete this assessment. Date: / / 
I hereby certify that the student has not been successful in completing this assessment. Date: / /
In order to pass this assessment, you must successfully complete the given task by meeting all eight (8) performance specifications and ensure all procedures are carried out in accordance with the checklist - if this criteria is not met, you must consult with the lecturer who will outline, in the comments section of this form, further requirements you must successfully complete before obtaining a pass in this assessment.

Before commencing this assessment you must:-
- read the checklist carefully and follow all of it's instructions
- obtain all necessary materials, tools and equipment
- ensure that your printing machine(if required for the task) is prepared for your assessment
- ensure you are familiar with all of the requirements necessary to complete this assessment
- consult your lecturer if you have any questions or concerns

### TASK SPECIFICATIONS

Given a litho press, single unit (GTO etc), all necessary tools, manuals and equipment:
- remove inkling distributor rollers;
- orally critique each of roller's condition to assessing lecturer;
- replace all rollers in machine;
- set all distributor rollers using a tester gauge/strip;
- ink up press and demonstrate settings to lecturer using 'ink strip width' method;
- set plate rollers to plate end;
- demonstrate plate roller setting to assessing lecturer.

### PERFORMANCE SPECIFICATIONS

- Rollers removed as described in manual/checklist
- Maximum time taken: 1.5 hours
- Rollers replaced as described in manual/checklist
- All tools/equipment cleaned/replaced
- All plate rollers set within recommended tolerances
- All Health & Safety Standards met
- All distributor rollers set within recommended tolerances
- Oral critique identifies all irregularities detrimental to roller performance

### CERTIFICATION

Lecturer
I hereby certify the student has successfully completed this assessment.
Date: __/__/__

I hereby certify that the student has not completed the extra criteria documented in the 'comments' section in order to successfully complete this assessment.
Date: __/__/__

I hereby certify that the student has been unsuccessful in completing this assessment.
Date: __/__/__

In addition to the theory units, the apprentice is expected to complete four practical tasks off-the-job. These are:

2.1 multi colour print;
2.2 number and perf
2.3 roller setting
2.4 blanket mounting

A description, including job/task and performance specification is included in the following pages.
APPENDIX 6

Issues related to the assessment of competency
ISSUES IN THE ASSESSMENT OF COMPETENCY

It is clear that one of the important outcomes of moves to introduce competency-based training will be an increased attention to the whole issue of assessment.

Some of the key issues and questions include:

- What is industry's role in the assessment process?
- What is the role of NPITC? Other players?
- How prescriptive in setting standards will the NTB be?
- How will cross-industry, cross-occupational standards and assessment be coordinated?
- How will the integration of on- and off-the-job assessment be achieved?
- How much training both on- and off-the-job will be formally assessed?
- Who is responsible for the assessment process?
- Who will assess on-the-job and/or off-the-job? How will they be trained? Who will train them? Will assessors need to be registered and acceptable to the industry? Who will register assessors? Will they be at both the workplace and at State/Territory or regional level?
- How will assessment be validated?
- Who will review, revise and monitor assessment procedures?
- How much will assessment cost? How will small firms (the bulk of the industry) deal with CBT and assessment?
- How will workplace disruption be minimised in undertaking training and assessment?
- How will equitable access to the assessment process be assured?
- How will existing skills (prior learning) be recognised?
- How will training and assessment undertaken by individuals be recorded and maintained?
- How will national consistency of assessment in the industry be assured?
- Who will pay?
- These are a few of the key questions and issues which might be addressed.
APPENDIX 7

SCOTVEC paper:
College – industry participants

Bringing educational institutions and employers into ‘Partnerships’ has become an important way of making vocational education and training more effective both North and South of the border. In its recent report ‘The Best of Both Worlds: A Guide to Training Partnerships’ SCOTVEC examined the various alternative models by which employers and colleges could collaborate “in the provision of vocational education and training, assessment and/or verification”. Here Ian G Haffenden of the Department of Educational Studies, University of Surrey sums up the findings of the report and its relevance to England & Wales.

The introduction of competence-based qualifications has led to an increased emphasis on work related learning and assessment in Vocational Education and Training (VET) in Britain. The future development and maintenance of the system of further education, across the country is thus fast becoming dependent upon new and/or improved college-employer partnerships. In England and Wales, the need for such partnerships has recently been emphasised in studies taking both college (see Haffenden and Brown 1989, Haffenden, Brown & Blackman 1990) and industry (see Knasel and Haffenden 1990) perspectives. Similarly in Scotland, research undertaken by SCOTVEC (SCOTVEC 1989, SCOTVEC 1990) has identified the need to support colleges and industry in the development of better and improved partnerships.

In an effort to address these findings, a national project was set up in Scotland by the Training Agency (now TEED). SCOTVEC and the Scottish Office Education Department (SOED), to:

- develop and disseminate guidance in the nature, choice and implementation of alternative models by which colleges and employers can collaborate in the provision of vocational education and training, assessment and/or verification.

The project has now reported and this article will describe and review, from an England and Wales perspective, the models for college-employer partnership identified by the study and the guidance provided in the published report: ‘The Best of Both Worlds: A Guide to Training Partnerships’ (SCOTVEC 1991).

In taking an England and Wales perspective, it should firstly be recognised that the history, the culture and the provision of VET in Scotland differs from England and Wales in a number of important ways. The contemporary provision in Scotland, for example, has a greater central coordination though the role and mediation of SCOTVEC (who approve centres for the delivery of SCOTVEC programmes) and has closer inter-institutional collaboration on a local level than is found elsewhere in Britain. Moreover, the introduction of Scottish Vocational Qualifications (SVQ), analogous to National Vocational Qualifications (NVQs) of NCVQ, followed earlier SCOTVEC developments in the field of competence-based qualifications. In particular, SCOTVEC has accrued 6 years experience in the delivery of National Certificate modules and is nearing completion of a programme to convert all advanced courses (eg HNC, HND) to units based on competence specifications. The teaching staff in further education colleges in Scotland were therefore well prepared for and acquainted with the nature of competence-led curricula (albeit largely based in educational institutions) prior to the introduction of a greater work-related emphasis. They were familiar with the procedures (the “paper work”) involved and it was only “the assessment of skills in the workplace itself that is new to them” (SCOTVEC 1991). Consequently, with the combination of central coordination and staff readiness the development of college-employer partnerships were to take place at a faster rate in Scotland than appears to have been the case in England and Wales. However, with the need for such partnerships gaining in momentum on both sides of the border, help and support in the form of the SCOTVEC Guide is timely and will be of great value to all college staff and employers seeking to develop better education-industry collaboration.

Models of College-Employer Partnerships: What the Guide has to Offer?

The SCOTVEC ‘Guide to Training Partnerships’ states that:

- Partnerships between education and industry are the way to maximise the benefit of investment in training and to develop the potential of the workforce. They lead to the award of national qualifications for competence developed at work.

To this end the ‘Guide’ sets out to:

- describe some models of partnerships between Further Education colleges and industry that are effective in practice;
- explain the conditions under which a model might be appropriately applied;
- suggest procedures required to implement an effective collaborative training programme;
- describe some of the benefits and some of the costs of partnerships.

The Guide is in two parts. The first part outlines five models of college-employer partnership and the second part summarises the general issues emerging from the models. Both parts are well structured and to the point. Whilst the research was undertaken in Scotland the models and guidance provided are directly relevant to an England and Wales context.

Starting with the traditional modes of college-employer collaboration (see figure 1) the Guide discerns five models of college-employer partnership currently in use across a range of occupational sectors (see figure 2). Although accepting that each individual college-employer partnership has its own unique characteristics the models represent particular types of partnership.
The Guide describes and explains the strengths and weaknesses, characteristic features and conditions for success. As such it provides, in an easy to read and assessable format, the key information required by staff in colleges and/or industry setting up and establishing partnerships or seeking to improve existing relationships. The models are presented in a general and widely applicable form and although many (though not all) have grown out of patterns of training based on VET programmes, the guidance provided will have utility across all VET programmes and seek to identify improved means for collaboration. In particular the Guide provides sufficient information on which college and employers can assess, choose, adapt and apply an appropriate strategy to address their particular needs for liaison, with the required checks and balances to ensure success is maximised.

FIGURE 1: Traditional Modes of College—industry Collaboration

- employers releasing staff for college training;
- employers taking on students for work experience placements;
- short courses run by the college for the employer;
- employers' involvement in college advisory committees and in planning of college training programmes.

FIGURE 2: Models of Partnership

- "Shared delivery" model in which the college and the employer's personnel each have their own distinct areas of responsibility within a jointly planned training programme;
- "Contracted-out" model in which the employer contracts the college to deliver a pre-defined programme. Umbrella model in which the college co-ordinates a programme involving a number of different employers or places of work;
- "Flexible learning" model in which the college provides support for open learning and work-based learning;
- "College as industry training centre" model in which the college acts as the training centre for a particular employer or industrial organisation.

Five Models of College-Employer Partnership

Whereas the five models of Partnership identified by the research are in part overlapping, the classification provides a useful basis for analysis and development. Taking the models separately, the 'Shared Delivery' model is based on a clear differentiation within the partnership of the specific elements of the training programme to be delivered by each party - a pattern of delivery that is becoming more common in England and Wales. The model applies in particular to cases where the college can provide particular expertise or learning/assessment opportunities not available to the employer. For example, where the workplace provision is narrowly defined and not sufficiently broad-based to deliver all the NVQ/SVQ competences. Here the college may be called upon to provide the knowledge and/or skills required. Success in this type of partnership is centrally dependent on the clarification of what is to be delivered by each party and ensuring the college and workplace delivery is consistent for the learner.

In the 'Contracted Out' model specific elements of training are undertaken by the college on behalf of the employer under contract. Here the college (or colleges) provide the training where, for example, the employers are not familiar with the competences required or where the workplace supervisors do not consider themselves to be trainers or have the necessary competence to take on that role. The major consideration for success here lies with ensuring the training programme delivered by the college is well defined and relevant. To achieve this sufficient procedures and opportunities for college-employer liaison must be established so that unforeseen problems can be speedily resolved and the relevance of the provision and its assessment procedures is guaranteed. In particular, the 'contracted out' model (commonly found in Construction for example) requires that suitably qualified and experienced college staff are involved, who are familiar with the workplace culture, practice and standards. This is important as the majority of the training is being entwined to the college.

The 'Umbrella' model, commonly found in VET/ET schemes across Britain, applies in situations where either there are a large number of small employers (for example in large rural communities) or there is one large employer with a number of small sites or work units. In both cases a considerable proportion of the training is likely to take place in the workplace with the workplace supervisor taking the responsibility for the programme of learning and much of its assessment. The role of the college staff here relates to the coordination of the programme and its verification and possibly in support of some parts of the delivery. Difficulties with this may arise in persuading some employers that quality training requires them to release staff and trainees at specific times from the workplace for support and ensuring that uniform standards are maintained across the range of workplaces (example Hairdressing Salons). One way this was achieved in successful partnerships was where formal contracts were drawn up by the college with the employers (in contrast to the 'contracted out' model where the contract is to the college) securing their commitment to the partnership and training.

The fourth partnership model, referred to as the 'Flexible Learning' model, probably holds the greatest potential for future consideration as a model in its own right or in union with other models. The 'Flexible Learning' model, as described in the Guide, requires that no direct training is undertaken in the college. The college role is one of coordination and support to a mixture of workplace training and assessment and the use of open learning programmes by the trainees. Here the college plays a supportive role in the administration and verification of standards and the provision of additional tutorial support for the open learning programme, including staff development as appropriate. To succeed the model requires that there is substantial change in currently accepted roles and expectations of college staff with the freeing-up time for workplace visits and liaison. However, the model does provide opportunities for collaboration where trainees have difficulty in being released at pre-set times (for example, in the retail trade or have too far to travel to attend colleges. The final model described is the "Industry Training Centre" model. This model applies in England and Wales, as in Scotland, to industries catered for by specialised college provision. Such colleges are typically found in land and sea-based industries such as Agriculture and Horticulture for example. Successful partnerships here have developed and evolved over time emerging out of the original reasons for the collaboration. The Industry Training Centre is characterised by close liaison being maintained through high level cooperation and staff interchange across the college, industry and industry training boards. In this model college staff have traditionally been involved in assessing trainees in the workplace.
General Guidance for Partnerships

In part two of the SCOTVEC Guide a summary is provided of the key areas identified by the research necessary for successful implementation of partnerships. These include a focus on how to initiate partnerships and the reasons quoted for doing so by those involved in partnerships that have worked. For example greater competitiveness in relation to a single European Market and the need to attract and keep suitably trained staff. The requirement to carefully plan partnerships is stressed with particular note of the staff development implications for colleges and industry and the need for support structures. An area identified for particular attention in all the models is liaison. Here, the type of liaison; who is to be the named college/industry contacts; at what times and in what location are they to meet; whether the meetings are formal or informal; and the means to maintain contact between meetings, are all important factors needing to be resolved in setting up partnerships.

Finally, clarification of college-employer roles and involvement in the delivery, assessment and verification of the training is summarised. The Guide concludes with a list of the benefits of partnerships to industry and colleges explored in the text (see figure 3).

FIGURE 3: Benefits of Partnerships

Benefits identified by industry include:
- competences in which the industrial organisation had no expertise;
- a modular approach to training;
- procedures for competence-based assessment;
- administration required for accreditation;
- implementing standards;
- planning a career progression for the individual through training programmes.

Benefits identified by colleges include:
- to improve staff awareness of industry’s needs and ways to working to allow them to present more relevant content;
- to keep skills up-to-date;
- spin-offs in the further training provision, loans or gifts of equipment, etc;
- improving contacts with local industry generally;
- to provide direct income.

In totality the Guide provides much needed support, information and intelligence on setting up and maintaining successful college-industry partnerships at a time when moves in this direction are taking place on a largely ad hoc basis north and south of the border. As such the SCOTVEC Guide to Training Partnerships will be seen as an important resource to all those involved in these developments in England and Wales, as well as in Scotland. The SCOTVEC Guide is free from SCOTVEC and is supported by a full Research Report giving greater detail and describing case studies of some of the models for those wishing to take the guidance further.
APPENDIX 8

CBT principles
PRINCIPLES OF A COMPETENCY-BASED TRAINING SYSTEM

COSTAC (November 1990)

(Source: A strategic framework for the implementation of a competency-based training system)

Scope

1. A competency-based training system will encompass all occupational classifications and reflect work organisations and job designs in conjunction with award restructuring.

2. Beyond the initial mapping from old classifications to new classifications, achievement of skill levels will be on the basis of assessed competency.

3. A competency-based training system will encompass skill formation both on-the-job and off-the-job, with the training authorities in the States and Territories exercising their legislative responsibility to ensure quality of training. This will involve the training authorities in co-ordinating the allocation of training responsibilities in consultation with industry and training providers.

Nature

4. A competency-based training system will comprise two components:

   - instruction which is characterised by the precise definition of skills to be achieved both on and off-the-job to specified standards and under specified conditions, which become the performance objectives for the skill formation process; and

   - assessment and certification of competency, related to both the on-the-job and off-the-job components of skill formation, with performance as the basic criterion.
5. Procedures (developed and agreed through tripartite processes) to assess performance against specified standards which take account of both on-the-job (formal and informal) and off-the-job skill formation, are essential. However, a number of possible approaches to the demonstration or assessment of competency can be taken, including continuous assessment, a final assessment and observed performance on-the-job.

6. A competency-based training system will involve:

- establishing the range of work and appropriate competency standards within each occupational classification;
- training programs (on and off-the-job) to meet those standards;
- the accreditation of training programs and the provision of training;
- the awarding of credits to enable individuals to move between different training systems; and
- mechanisms for assessing the skills of individuals against the agreed competency standards and the certification of skills possessed.

Competency-based training will support the building and recognition of the skill profiles of individual workers, and thereby combat the dilution of skills.

8. Standards in relation to knowledge, skills and application can be expressed in both quantitative and qualitative terms. The approach will vary and will be determined by industry.

9. Competency-based training is not incompatible with the identification of nominal training periods.

10. Occupational health and safety issues will be identified and addressed in the development of a competency-based training system.

11. Equal employment opportunity will be integral to the conceptualisation and implementation of competency-based training. Discriminatory barriers based on gender, age, social or educational background are inconsistent with competency-based training.

Implementation and Administration

12. Primary responsibility for defining skills and competence standards will lie with industry parties.

13. In the development and implementation of a competency-based training system agreed tripartite consultative mechanisms will be crucial.

14. Co-ordination of award, legislative and administrative changes will be needed to provide the basis for appropriate levels of national consistency.

15. Commonwealth and State/Territory training authorities will adopt a consistent approach to the implementation of a system which is agreed by all parties. In this regard a major role will exist for the National Training Board (NTB) through its co-ordination of the development of standards by State and Territory training authorities, tripartite industry training bodies and/or award-based bodies.

16. There will be roles for a range of interested parties (including industry bodies, group training schemes, individual employers and experts in areas such as EEO and occupational health and safety matters) in the administration of a competency-based training system, including assessment processes, under the supervision of State and Territory training authorities.

17. The establishment of processes for recording skills acquired throughout working life will be necessary, for example a "skill passport" system.

18. Priority will be given to the early development, and where necessary the re-orientation, of skills required by State and Territory training authorities, TAFE and industry-based personnel in developing, delivering and managing competency-based training.

19. Additional costs will principally be met by industry, but with some seeding and on-going funding from government. Implementation, within the framework agreed by the industrial parties, will be a matter for each government to decide within the limits of available resources and according to government priorities.

20. The apprenticeship indenture will become a contract of training for all new apprentices commencing training after 31 December 1991.

21. Implementation will occur incrementally, but should proceed as quickly as possible with substantial progress by 1993 towards an overall competency-based training system based on standards endorsed by the National Training Board.
APPENDIX 9

Overhead transparencies used to support talk on

- workshop outcomes
- competency-based training
- implications for printing industry
- case study information — hospitality
- training in the printing industry
PRINT TRAINING WORKSHOP

Intended outcomes

- Familiarise participants with on-the-job training material (so that they can familiarise workplace trainers with the material)

- Identify problems/issues associated with developing a training culture in the printing industry

- Develop a strategy to promote integration of training provided on- and off-the-job

- Develop a strategy to market/implement the product
COMPETENCY-BASED TRAINING (LEARNING) SYSTEM

Competency = ability to perform the activities within an occupation or function to the standard expected in employment

KEY FEATURES

- primary emphasis is on what a person can do as a result of training (outcomes)
- training to industry-specific standards
- comprises two components:
  - instruction aimed at a learner achieving competency in
    - precisely defined skills and knowledge
    - to specified standards
    - under specified conditions
  - certification is based on assessment of competency achieved in the workplace and off-the-job
COMPETENCY-BASED TRAINING

Other features:

- not time serving
- flexible entry/exit
- flexible delivery modes - to suit learner's pace and style of learning
- can take place in variety of settings
  - in workplace
  - in simulated work environment
  - in training room
- takes account of learner's existing level of competency
- assessment takes place when learner is ready
General consensus has emerged that a CBT system would provide the most desirable framework for the reform of the training system, given its emphasis on training outcomes related to industry and economic needs. Such a system requires that training have defined standards of competency and be undertaken and certified against these standards.
National competency standards play a crucial role in providing necessary linkage for integrating and articulating all types of training.

- if training involves on- and off-the-job element, there should be an integrated curriculum;
- curriculum must be based on national competency standards.

Source: Recognition of Training, VEETAC, August 1991
COMPETENCY = specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required in employment

The principal purpose of a CBT system is to ensure that certification is based on attainment of competence rather than completion of a training course or program.

Source: Recognition of Training, VEETAC, August 1991
EMPLOYER'S ROLE IN PROVISION OF TRAINING

It is accepted that industry must play a central role in setting the competency standards and curricula, and in establishing the requirements that must be met to ensure practical, high quality outcomes from the system.

Equally important is the recognition that employers must ensure consistent, high quality training is provided in the workplace.

(Source: CAI document, Proposals for the Australian Vocational Education and Training System, 1991)
IMPLEMENTATION OF CBT: OPERATIONAL PLAN

- established by VEETAC Working Party
- framed in form of goals to be achieved by 1993

NATIONAL COMPETENCY STANDARDS

- competency standards bodies to be approved for all significant industry sectors and occupations
- standards developed for 50% of award workforce

CURRICULUM ISSUES

- all curriculum to be in CBT form
- where standards exist, curriculum to be based on standards
- where training program contains both workplace and off-job components, they should be integrated

LEARNING MATERIALS

- sufficient learning materials are available to support workplace and off-the-job CBT
- materials are available to all approved training providers

ASSESSMENT SYSTEM

- focuses on outputs
- is cost effective
- is acceptable in terms of validity and reliability
- is supported by trainers and approved assessors
- policy on certification is developed and operating
IMPLICATIONS OF CBT FOR THE PRINTING INDUSTRY

- develop competency standards
- provide training in workplace to achieve competency standards
- develop methods of assessing competence in workplace
- develop means to record competencies
- train workers to train and assess and recognise prior learning
WHO ARE THE ON-THE-JOB TRAINERS IN THE PRINTING INDUSTRY?

- Expert workers
- Leading hands
- Supervisors
- Managers
CHANGING ROLE OF THE SUPERVISOR IN INDUSTRY

Source: Australian Mission on Management Skills

Recommendations

- Australia needs to recognise the importance of management (especially first line management/supervisory) skills to Australia's economic future

  Where there is a high level of cooperation amongst business and industry, unions, education providers and government, opportunities and outcomes associated with management skills development can be optimised.

- National strategy to upgrade skills of supervisors:
  - In 2 years time curriculum;
  - In 5 years time all new appointments to supervisor acquire qualification;
  - In 10 years time all supervisors in workforce have qualification.
CHANGING ROLE OF THE SUPERVISOR IN INDUSTRY

Source: Australian Mission on Management Skills

There is need to ensure that supervisors/managers are provided with skills to perform this role (i.e., role of coach, trainer, mentor, co-ordinator, leader).

Perhaps the printing industry should work towards this goal?
CHANGING ROLE OF THE SUPERVISOR IN INDUSTRY

Source: Australian Mission on Management Skills

- on-the-job training is complemented by off-the-job training

- supervisory training included:
  - advanced technical training
  - business
  - instruction
  - people management skills

- role of supervisor is changing from that of person who directs and controls to that of coach, mentor, trainer, co-ordinator, leader.
CHANGING ROLE OF THE SUPERVISOR IN INDUSTRY

Source: Australian Mission on Management Skills

This mission believes that overseas best practice in this area can be successfully applied to Australian business and industry. However, this will require a significant increase in level of resources devoted to management skills formation and a more dynamic role for business and industry and their representative organisations.
INTEGRATION BETWEEN ON- AND OFF-THE-JOB TRAINING IN PRINTING MACHINING

Achievements to date:

- national common curriculum
- on- and off-the-job training materials projects are working in parallel

What is now needed:

- how to put theory into practice!
  
  ie how to make sure training given to apprentices on- and off-the-job complement and reinforce each other

IMPLEMENTATION!
IMPORTANCE OF TRAINING IN PRINTING INDUSTRY

- integrated on- and off-the-job curriculum, therefore apprentice training does take place in the workplace.

- rate of technical change in industry means more and more training will occur in the workplace which will affect wide cross-section of workers.
Source: Technical Change and Skill Formation in the Printing Industry

1950 - 1970  Letterpress
1970 - 1990  Offset
1990s onwards  Computer to press (CTP)  
= merging of telecommunications
  micro-electronics
  computer power
  printing

The creative potential now inherent in the new technology requires an operator that has a unique mixture of skills (such as high quality scanning and outputting skills) which are not being offered by the traditional training programs currently being offered through TAFE and the apprenticeship system.

Latest studies of new technology in printing and allied trades show a trend towards

- multi-skilling
- growth in intellectual and design tasks
- partial change in role of the supervisor (technical adviser and co-ordinator)
Training, whether provided by government, an enterprise-based provider, commercially-based provider or community-based provider should be recognised.

All training should:

- maintain acceptable standards and quality;
- deliver required outcomes.

Quality of training:

a. competence of trainers;

b. curriculum;

c. facilities;

d. assessment process.

Source: Recognition of Training, VEETAC, August 1991
PROBLEMS/ISSUES RELATED TO IMPLEMENTATION OF ON-THE-JOB TRAINING

- assessment
  - who conducts workplace assessment?
  - what training do assessors need?
  - who assesses the assessors?
- record of competencies
- place of training in re-negotiated awards
  - contracts of training?
  - who qualifies to employ an apprentice?
- recognition of prior learning (RPL)
- lack of facilities to conduct all required training
- new role for TAFE
- certification of training - NPITC?
  - who certifies?
  - who keeps register of all competencies held by the individual?
- how to train and accredit workplace trainers
- different off-the-job training arrangement (2 X 10 wk blocks vs 5 X 4 wk blocks)
- who owns the process and will ensure it happens?
- frequency of contact between on- and off-the-job trainers
APPENDIX 10

Draft letter to employers
Date

To Chief Executive
and
Production Manager

(Modified letter to each apprentice direct from college 91 and 92)

Dear

RE: On-the-job training for printing machining apprentices

Many significant changes have recently occurred which will affect training as a discipline and ultimately your business.

Such changes include:

- the training guarantee (levy)
- competency-based training
- new safety legislation
- quality assurance plans
- (list all issues)

TAFE and the National Printing Industry Training Council have a responsibility not only to advise you of these changes and how they affect the printing industry, but how they can benefit your organisation.

Of particular importance to you . . .

NOTE: The letter should include an order form and advance brochure for the product training material.